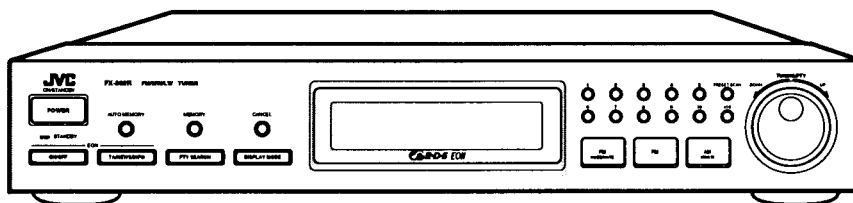


# JVC

## SERVICE MANUAL

### FM/MW/LW TUNER

# FX-382RBK



**COMPU LINK**  
 Remote Control Component

#### Area Suffix

BS	....	the U.K.
EF	....	Continental Europe Except Germany
EN	....	Nordic Countris
G	.....	Germany

## Contents

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### **Safety Precautions**

1. The design of this product contains special hardware and many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorised in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits.
2. Any unauthorised design alterations or additions will void the manufacturer's guarantee ; furthermore the manufacturer cannot accept responsibility for personal injury or property damage resulting therefrom.
3. Essential safety critical components are identified by ( $\triangle$ ) on the Parts List and by shading on the schematics ,and must never be replaced by parts other than those listed in the manual. Please note however that many electrical and mechanical parts in the product have special safety related characteristics . These characteristics are often not evident from visual inspection . Parts other than specified by the manufacturer may not have the same safety characteristics as the recommended replacement parts shown in the Parts List of the service manual and may create shock , fire , or other hazards .
4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after re-assembling.

### **Warning**

1. Service should be performed by qualified personnel only.
2. This equipment has been designed and manufactured to meet international safety standards.
3. It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
4. Repairs must be made in accordance with the relevant safety standards.
5. It is essential that safety critical components are replaced by approved parts.
6. If mains voltage selector is provided, check setting for local voltage .

# Instruction Book

## Getting Started

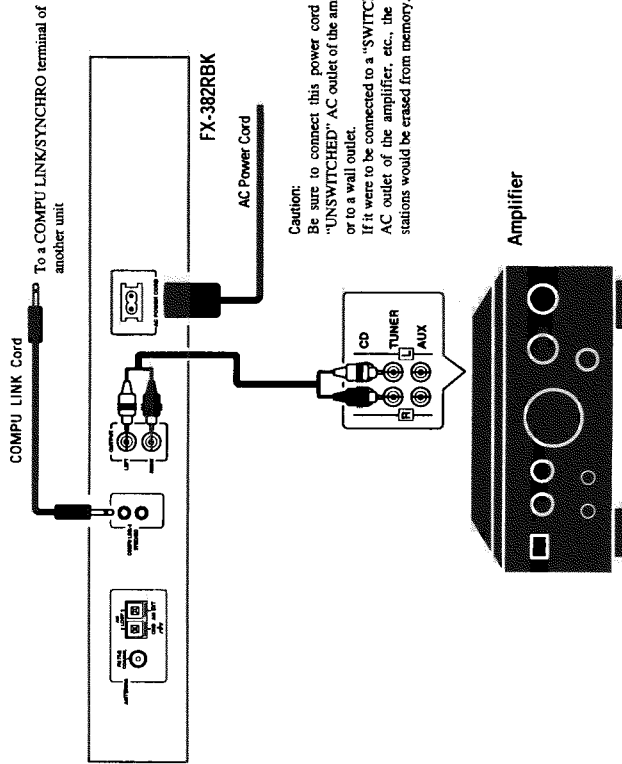
Check to be sure you have all of the following items, which are supplied with the Unit. The number in the parenthesis indicates the quantity of the pieces supplied.

- AM (MW/LW) Loop Antenna (1)
- FM Wire Antenna (1)
- AC Power Cord (1)
- Audio Cord (1)
- COMPU LINK Cord (1)

If anything is missing, contact your dealer immediately.

## Connecting to the Amplifier

- Notes:**
- Do not connect the power cord unless all connections are completed.
  - Connect to the amplifier with the left and right channels matched correctly. Reversed channels will degrade the stereo effect.



**Caution:**  
Be sure to connect this power cord to an "UNSWITCHED" AC outlet of the amplifier or to a wall outlet. If it were to be connected to a "SWITCHED" AC outlet of the amplifier, etc., the preset stations would be erased from memory.

Thank you for purchasing a JVC product. Before you begin operating this Unit, please read the instructions carefully to be sure you get the best possible performance. If you have any questions, consult your JVC dealer.

## Features

- You can preset stations easily using Auto Memory.
  - This Unit is compatible with RDS (Radio Data System) broadcasting.
    - EON data enables you to automatically tune into a station broadcasting the programme you want.
    - PTY Search finds programmes in the category you wish.
- In addition, Station Names, Time Clock and Radio Text can be displayed using data sent by stations.

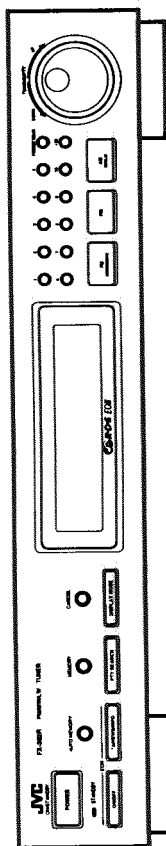
## IMPORTANT

1. Installation
  - Select a place which is level, dry and neither too hot nor too cold (between 5°C and 35°C).
  - Leave sufficient distance between the Unit and your TV.
  - Do not install the Unit directly on the amplifier, or the amplifier's power transformer may interfere with reception.
  - Keep the power and signal cords away from the antennas to avoid hum.
  - When using the FM antenna provided, extend it.
2. Power cord
  - Do not handle the power cord with wet hands!
  - A small amount of the power (4 watts) is always consumed as long as the power cord is connected to the wall outlet.
  - When unplugging from the wall outlet, always pull the plug, not the power cord.
3. Malfunctions, etc.
  - There are no user serviceable parts inside. If the Unit fails to operate, unplug the power cord and consult your dealer.
  - Do not insert any metallic object inside the Unit.
  - Do not allow water to get inside the Unit.

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# Listening to the Radio



This Unit is compatible with RDS broadcasting. RDS broadcasting provides you with various types of information in addition to normal broadcast programmes. When this Unit receives signals from FM stations which provide RDS broadcasting, the RDS indicator on the display comes on to inform you that the station currently being received is an RDS station. For further information on RDS, refer to "Receiving FM Stations with RDS (Radio Data System)" on page 7.



### Turning On FX-382RBK

- Press the POWER button; the STANDBY indicator goes out.
- This Unit becomes ready to do whatever it was doing when the power was last shut off.
- You can turn on the Unit by pressing either the FM or AM (MW/LW) button.

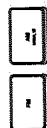


### Turning Off FX-382RBK

- Press the POWER button again; the STANDBY indicator lights up and the display blanks.
- A small amount of the power (4 watts) is always consumed even in standby mode.
- To switch off the Unit completely, unplug the AC power cord from the AC outlet.

## Tuning in Stations

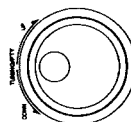
This Unit can receive FM and AM (MW/LW) stations. Stations can be tuned manually, automatically, or from preset memory.



Press the FM or AM (MW/LW) button to turn on the Unit.

### Manual Tuning

Turn the TUNING/PTY knob slowly either to the UP or DOWN direction. You can change the frequency one click at a time in either direction. Turn the knob until you find the frequency of the station you want to listen to.



### Automatic Tuning

Turn the TUNING/PTY knob quickly either to the UP or DOWN direction. Frequency starts changing in the UP or DOWN direction, and as soon as a station is tuned in, the TUNED indicator on the display comes on and the frequency stops changing. Repeat the above procedure until a station you want is tuned in.

### Tuning in Preset Stations

This method is possible after presetting stations by yourself. (See page 5.)

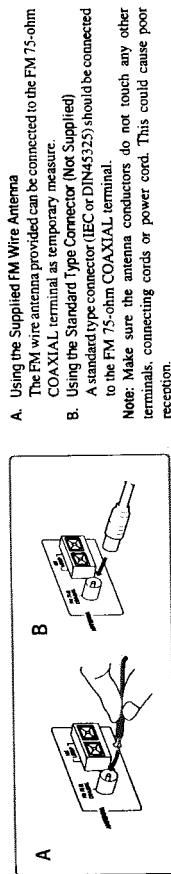
Select preset stations by pressing the numeric keys (1-10, +10).

### How to use the numeric keys

- For numbers from 1 to 10, just press the button of the number you want.
- For numbers from 11 to 20, first press the +10 button, then press the one's digit of the number you want — to get 15, press +10 first, then press 5. For 20 press +10 and 10.
- For numbers from 21 to 30, press the +10 button twice; then press the one's digit — to get 25, press +10 +10 and 5. For 30 press +10 +10 and 10.
- For numbers from 31 to 40, press the +10 button three times, then press the one's digit — to get 32, press +10 +10 +10 and 2.

## Connecting the FM and AM (MW/LW) Antennas

### FM Antenna Connections



Extend the supplied FM wire antenna horizontally.

If reception is poor, connect an outdoor antenna.

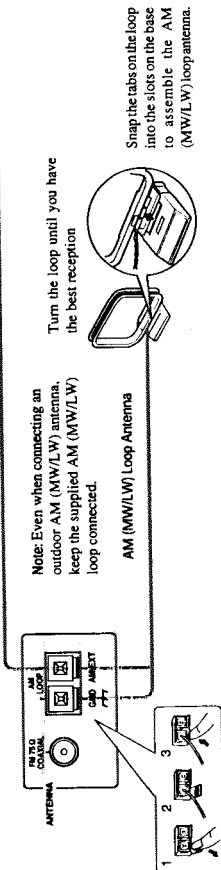
Before attaching a 75-ohm coaxial cable (the kind with a round wire going to an outdoor antenna), disconnect the supplied FM antenna.

### AM (MW/LW) Antenna Connections

AM (MW/LW) Antenna Wire (Not Supplied)

If reception is poor, connect an outdoor antenna.

Note: Even when connecting an outdoor AM (MW/LW) antenna, keep the supplied AM (MW/LW) loop connected.



### Receiving in Stereo or Monaural

- When an FM stereo broadcast is hard to receive or noisy:
  - Press the FM/MODE/MUTE button and reception improves, although you lose stereo effect. In this state, you will hear some noise while tuning into a station.
  - To restore stereo effect, press the FM/MODE/MUTE button again so that the FM AUTO/MUTE indicator on the display comes on. In this state, when a programme in stereo the STEREO indicator comes on and you will hear the stereo sound; when in monaural, the STEREO indicator goes off and you will hear the monaural sound. Furthermore, in this state you will not hear noise while tuning in stations.



### Presetting Stations in Memory

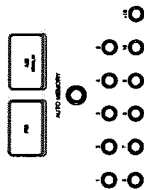
- Once stations are assigned to channel numbers, any of these stations can quickly be called up using the numeric keys.
- You can preset a total of 40 stations, either FM or AM (MW/LW).
  - In order to use RDS broadcasting effectively, you need to preset stations in memory. Both PTY Search and EON function (which will be explained later) are applicable only to the preset FM stations.
  - In some cases, test frequencies have been already memorized for the tuner since the factory examined the tuner preset function before shipment. This is not a malfunction. You can preset the stations you want into memory by following the presetting method.

#### Easy Presetting Auto Memory

### Presetting by Auto Memory

Auto Memory can preset stations in order of their station frequencies starting from the lowest to highest frequency in each FM and AM (MW/LW) band. Make sure that you have the lowest frequency displayed for both FM and AM (MW/LW) before starting Auto Memory.

FM: 87.50 MHz  
AM (MW/LW): 144 kHz

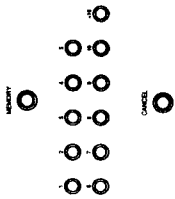


- Press the FM or AM (MW/LW) button to select the band you want to preset using Auto Memory.
- Press the AUTO MEMORY button. MEMORY and "----" come on for 5 seconds on the display. During the 5 seconds you can assign a channel number to the station and enter it into memory. Enter the first channel number using the numeric keys. The Unit starts scanning the stations. When a station is received, the preset channel number and the received frequency blink on the display for 5 seconds. When blinking stops, the frequency is stored in memory of the preset channel number. The Unit continues scanning and automatically assigns the next station received to the next preset channel number. When the highest frequency of the band is reached after repeating this procedure, the last preset channel number is called up on the display. If no frequencies have been stored, the highest frequency will be indicated.
- Repeat Steps 1 to 3 for the other band.
- When presetting the other band, make sure that the preset channel numbers already used for the previous band cannot be used again; otherwise, previously preset stations are erased.

- While storing FM stations using Auto Memory, these stations are received in the FM AUTO/MUTE mode.
- If you press the AUTO MEMORY button while the channel number and frequency are blinking, the currently received station will be skipped and the Unit will start searching for the next station.
- If you have not started Auto Memory with the lowest frequency, stations with lower frequencies than the one you began Auto Memory with are not preset.
- If two different stations are assigned to the same channel number, the newly preset station will be entered into memory. When using Auto Memory, make sure that channel numbers for different bands (FM, AM (MW/LW)) do not overlap one another.

### Normal Preset

- Tune in the station you want to set.
- Press the MEMORY button. MEMORY and "----" come on for 5 seconds on the display. During the 5 seconds you can assign a channel number to the station and enter it into memory. Enter a channel number using the numeric keys. The station is assigned to the channel number showing on the display.



### How to Cancel Preset Channels

- Press the CANCEL button. CANCEL and "----" come on for 5 seconds on the display. During the 5 seconds you can cancel a preset station. The station is erased.



#### How to use the numeric keys

- For numbers from 1 to 10, just press the button of the number you want.
- For numbers from 11 to 20, first press the +10 button, then press the one's digit of the number you want — to get 15 press +10 first, then press 5. For 20 press +10 and 10.
- For numbers from 21 to 30, press the +10 button twice; then press the one's digit — to get 25 press +10 +10 and 5. For 30 press +10 +10 and 10.
- For numbers from 31 to 40, press the +10 button three times, then press the one's digit — to get 32 press +10 +10 +10 and 2.

### Scanning Through Preset Stations

You can scan through your preset radio stations stopping at any station you want to listen to.

- Press the PRESET SCAN button. The Unit scans your preset stations. Each preset station is received for a few seconds with the channel number blinking.
- If you want to listen to one of the preset stations, press the PRESET SCAN button again while the channel number is blinking.

If you do not stop at any station, the Unit will scan through the preset stations once, then return to the station received before starting the scanning.

## Receiving FM Stations with RDS (Radio Data System)

RDS is a broadcasting service a growing number of FM stations are now providing. It allows the FM stations to send additional signals along with their regular programme signals. For example, the stations send their station names and information about what type of programme they broadcast, such as sports or music, etc. When tuned to an FM station providing the RDS service, the RDS indicator comes on, the station frequency (and then the station name if sent) is displayed. One convenient RDS service is "Enhanced Other Networks (EON)". This allows the Unit to automatically switch to a programme of your choice when one starts in your broadcast area.



- Not all FM stations provide RDS service, nor do all RDS stations provide the same services. If in doubt, check with local radio stations for details on RDS services in your area.

Note: RDS may not operate correctly if the station tuned is not transmitting data properly or if the signal strength is weak.

### What Information RDS Can Provide

The following RDS services are available. You can see the following RDS information by pressing the DISPLAY MODE button.

- "wait (Service Name)" appears while RDS data is being read. Identifies each station by a name.

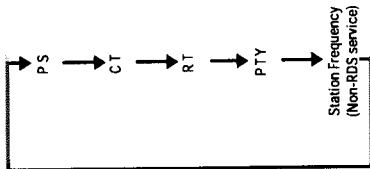
PS (Program Service name)

CT (Clock Time)

RT (Radio Text)

PTY (Programme Type)

Station Frequency (Non-RDS service)



Note: CT (Clock Time) indication of this Unit utilizes CT data sent by stations. Be aware that some stations may not provide an accurate time.

- TRAFFIC: Traffic announcement (usually called "TA")
- NEWS: News
- INFO: Programmes on medical service, weather forecast, etc.
- POP M: Pop music
- ROCK M: Rock music
- M.O.R. M: Middle-of-the-road music (usually called "easy listening")
- LIGHT M: Light music
- CLASSICS: Classics
- OTHER M: Other music
- SPORT: Topical programme expanding on current news or affairs
- EDUCATE: Educational programmes
- DRAMA: Radio plays
- CULTURE: Programmes on national or regional culture
- SCIENCE: Programmes on natural sciences and technology
- VARIED: Other programmes like comedies or ceremonies
- NONE: Undefined
- ALARM: Emergency broadcasts

Station Frequency (Non-RDS service)

Displays station frequencies

Note: If you press the DISPLAY MODE button while receiving non-RDS FM stations or AM (MW/LW) stations, "NO RDS DATA" will appear on the display.

## Searching for Programmes by PTY Codes

One of the advantages of the RDS service is that you can locate a particular kind of programme by specifying the PTY (Programme Type) codes.

- PTY Search is applicable to the preset FM RDS stations only. To search for a programme using the PTY codes, follow this procedure:

- Press the PTY SEARCH button. "select PTY" appears on the display.
- Turn the TUNING/PTY knob while "select PTY" remains on the display.
  - When you turn the TUNING/PTY knob the PTY codes change in the following order: TRAFFIC ↔ NEWS ↔ INFO ↔ POP M ↔ ROCK M ↔ M.O.R. M ↔ LIGHT M ↔ CLASSICS ↔ OTHER M ↔ AFFAIRS ↔ SPORT ↔ EDUCATE ↔ DRAMA ↔ CULTURE ↔ SCIENCE ↔ VARIED ↔ NONE ↔ TRAFFIC
- Press the PTY SEARCH button again while the selected PTY code remains on the display. Searching starts. The selected PTY code blinks during PTY Search, and at the same time preset numbers continue to change.

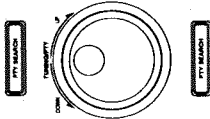
Once the station broadcasting a programme of the selected PTY code is located, searching stops. Then the station name (if PS code is being sent) appears and the station is tuned in. The preset channel number stays blinking for 15 seconds before searching function ends. If you press the PTY SEARCH button again during this period, search for the same PTY code will restart.

PTY Search is completed when the indicated preset channel number stops blinking and stays lit. If stations broadcasting a programme of the selected PTY code can not be located, "not found" will appear after going through the preset channels. The Unit will then go back to the station which had been tuned in before starting PTY Search.

Press the FM button when you wish to cancel PTY Search.

Note: If you operate the Unit while PTY Search is in use, PTY Search will be cancelled.

Searching for and receiving a programme of the category you want: PTY Search



## EON Function

With the EON (Enhanced Other Networks) code, the Unit can perform a standby reception which enables you to obtain desired PTY code(s) available from other stations.

- The EON indicator will come on only while receiving stations with an EON code.
- EON Standby reception is applicable to the preset FM stations only.
- EON Standby reception cannot work while receiving non-RDS FM stations or AM (MW/LW) stations.

### Setting EON Standby Reception

- Press the EON ON/OFF button so that "EON MODE" appears on the display. Indication of the PTY code(s) previously selected comes on.
- Select PTY code(s) you want by pressing the TA/NEWS/INFO button.

TA: Traffic announcement in your area.  
 NEWS: News  
 INFO: Programmes on medical service, weather forecast, etc.  
 Each time you press the TA/NEWS/INFO button, the indications change as follows:  
 [ TA NEWS INFO ] → [ TA INFO ] → [ NEWS INFO ] → [ TA NEWS INFO ] → [ TA NEWS INFO ] → (back to the beginning)

As soon as your selection is entered, the Unit goes into the EON Standby reception mode.

Obtaining the desired information immediately: EON Standby Reception



# COMPU LINK Remote Control System

JVC has developed the COMPU LINK Remote Control System so that you can operate individual JVC components such as an amplifier, tuner, CD player and cassette deck as an integrated audio system.

In order to enjoy the COMPU LINK Remote Control System, you need to use JVC components compatible with COMPU LINK Remote Control System. These components are equipped with terminals marked either "COMPU LINK-2/SYNCHRO" or "COMPU LINK-3/SYNCHRO". By simply connecting COMPU LINK terminals of these components to the COMPU LINK cords, you can instantly have access to the COMPU LINK Remote Control System.

**Different Versions of the COMPU LINK Remote Control System**  
 There are three different versions of COMPU LINK Remote Control System, "COMPU LINK-1", "COMPU LINK-2" and "COMPU LINK-3". The "COMPU LINK-3" is the latest version with extra functions. It is possible to connect components compatible with "COMPU LINK-3" with those compatible with other versions, but you cannot use the latest functions available only for "COMPU LINK-3".

- Basic Functions of the COMPU LINK Remote Control System**
- Pressing the Play button of the source unit will turn on the source unit and amplifier, select the source on the amplifier and start playing on the source unit.  
 (Applicable only when the amplifier is compatible with COMPU LINK-3.)
  - Selecting the source on the amplifier will turn on the source unit and starts playing.
  - Synchronized Recording enables automatic recording of playback of the selected source.
  - All functions of the COMPU LINK Remote Control System can be operated by the remote control unit of the amplifier.

## Using FX-382RBK as a COMPU LINK Remote Control System Component

FX-382RBK is compatible with COMPU LINK-3.

### Connections

- Connect FX-382RBK's COMPU LINK-3 terminals to those of other equipment using the COMPU LINK cord with monaural mini-plugs.
- Either of the two COMPU LINK terminals can be used for connection.
  - The power plug should be plugged in to either the amplifier's "UNSWITCHED" AC outlet or a wall outlet.
  - If plugged in to the amplifier's "SWITCHED" AC outlet, the Unit will not operate as normally as expected using the COMPU LINK Remote Control System.

### Functions of the COMPU LINK Remote Control System in FX-382RBK

- Pressing the FM or AM(MW/LW) button turns on the amplifier, changes the source to the tuner and receives a broadcast.
- (Applicable only when the amplifier is compatible with COMPU LINK-3.)  
 FX-382RBK can be operated using the remote control unit of the amplifier.
- Point the remote control unit to the amplifier.  
 (Refer to the amplifier's instructions.)
- If the selected PTY code by EON Standby reception is received, the System can automatically select the source to the tuner on the amplifier and tune into the station broadcasting the selected PTY code. If the amplifier is COMPU LINK-3 compatible, the System can turn on the amplifier even if it is off (in STANDBY-mode), then change the source to tuner and receive a broadcast.
- With a special amplifier connected, the source on the amplifiers automatically goes back to the previously selected one when broadcasting of a programme tuned by EON Standby reception ends.  
 (For further details, consult your dealer.)
- Pressing the numeric keys or the PRESET SCAN button will change the source to tuner on the amplifier. If a station is received by PTY Search, it will change the source to tuner on the amplifier and receive a broadcast.

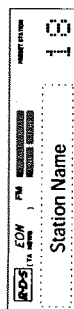
**Note:** While Synchronized Recording, the source selected on the amplifier will not change to tuner even if EON Standby reception starts working to receive a station. However, if recording, other than Synchronized Recording is carried out, the source selected on the amplifier will be changed to the tuner when EON Standby reception starts working to receive a station.



If you want to cancel EON Standby reception, press the EON ON/OFF button again so that indication of the PTY code(s) disappears.

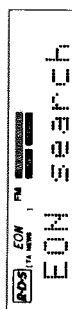
While this Unit is for EON Standby reception, the display changes as follows:

1. While waiting for EON data

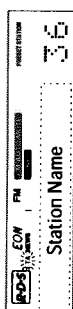


**Note:** If no EON data is received, this Unit remains in this mode.

2. When the information of desired PTY data is received, the Unit tunes into the station sending the PTY data (sound is muted).



3. When the station is tuned in, the indication of received PTY code starts blinking.



**Note:** If EON Standby reception fails, "EON failed" will appear. EON Standby reception is cancelled, and the Unit will then go back to the station previously tuned in.

When broadcasting of the desired PTY code(s) ends, "EON end" appears and the Unit automatically goes back to the station previously tuned in. (If you use the COMPU LINK Remote Control System, you can go back to the previously selected source. See page 10.)

- While receiving a programme of the selected PTY code(s) by EON Standby reception, the station will not change to other stations even if a programme of the same type is available from them.
- If you press the EON ON/OFF or T/NEWS/INFO button while receiving the station tuned by EON Standby reception, the Unit will automatically go back to the station previously tuned in.

### Notes:

- If you operate the Unit (except pressing the DISPLAY MODE button) while receiving the station tuned by EON Standby reception, EON Standby reception will be cancelled. (The Unit will not go back to the station previously tuned in.)
- EON broadcasts of some stations may not be compatible with the Unit. In the case of an incompatible EON broadcast, the EON indicator on the display will not come on.

## ALARM Function

When an ALARM (Emergency) broadcast is being received, "ALARM!" blinks on the display and tune in the station broadcasting the ALARM signal.

- ALARM Function cannot work while receiving non-RDS FM stations or AM (MW/LW) stations.



Specifications

<b>FM SECTION</b>	<b>IHF</b>	<b>DIN</b>
Tuning Range	87.5 — 108.0 MHz	
Usable Sensitivity	10.8 dBf (0.95 $\mu$ V/75 ohms)	
26 dB Quieting Sensitivity		1.0 $\mu$ V/75 ohms
Mono	16.3 dBf (1.8 $\mu$ V/75 ohms)	
50 dB Quieting Sensitivity	38.3 dBf	
Mono		
Stereo	(22.5 $\mu$ V/75 ohms)	22.5 $\mu$ V/75 ohms
S/N 46 dB Stereo Sensitivity		
Signal to Noise Ratio		72 dB
Mono	80 dB	64 dB
Stereo	73 dB (IHF-A)	(weighted)
Total Harmonic Distortion (1 kHz)		0.09%
Mono		0.12%
Stereo		
Capture Ratio	1.5 dB	
Selectivity	60 dB ( $\pm$ 400 kHz)	55 dB ( $\pm$ 300 kHz)
Stereo Separation (1 kHz)	40 dB	40 dB
Frequency Response	20 Hz — 15 kHz +0.3 dB, -3.0 dB	
IF Response Ratio	100 dB at 98 MHz	
AM Suppression	60 dB	
Output Level/Impedance		550 mV/1.8 kohms
Sub-carrier Suppression	70 dB	

<b>MW SECTION</b>	
Tuning Range	522 — 1629 kHz (9 kHz Step)
Usable Sensitivity	300 $\mu$ V/m (7.5 $\mu$ V) (LOOP AERIAL) 0.5%
Total Harmonic Distortion	
Signal to Noise Ratio	50 dB
Selectivity	35 dB ( $\pm$ 9 kHz at 999 kHz)
Image Response Ratio	40 dB
IF Response Ratio	60 dB
<b>LW SECTION</b>	
Tuning Range	144 — 288 kHz (1 kHz Step)
Usable Sensitivity	600 $\mu$ V/m (15 $\mu$ V) (LOOP AERIAL)
Signal to Noise Ratio	50 dB
Selectivity	35 dB ( $\pm$ 9 kHz)
Dimensions	435 x 80 x 291 mm (w/h/d) 17-3/16 x 3-1/16 x 11-1/2 inches
Mass	2.8 kg 6.2 lbs
Power Specifications	
Power Requirements	AC 230V $\sim$ , 50 Hz
Power Consumption	8 watts
Supplied Accessories	
AM (MW/LW) Loop Antenna	1
FM Wire Antenna	1
AC Power Cord	1
Audio Cord	1
COMPU LINK Cord	1

Design and specifications are subject to change without notice.

Troubleshooting

- If you are having a problem with FX-382RBK, check this list for a possible solution before calling for service.
- If you cannot solve the problem from the hints given here, or the Unit has been physically damaged, call a qualified person, such as your dealer, for service.

Symptom	Possible Cause	ACTION
Hard to listen to broadcasts because of noise.	The antenna is disconnected.	Re-connect the antenna securely.
	The AM (MW/LW) loop antenna is too close to the Unit.	Change the position and direction of the AM (MW/LW) loop antenna.
	The FM wire antenna is not properly extended and positioned.	Extend FM wire antenna to the best reception position.
No sound can be heard.	Incorrect amplifier operations.	Read instructions for the amplifier carefully for correct operations.
	The FM AUTO/MUTE mode is used when receiving a FM broadcast with weak signals.	Press the FM MODE/MUTE button to turn off the FM AUTO/MUTE mode. (The FM MODE/MUTE indicator goes off.)
EON does not function.	No stations are being preset.	Preset stations.
	No EON broadcasts.	
PTY Search does not function.	No stations have been preset.	Preset stations.



## Description of Major LSIs

### ■ MN172124K8E (IC501) : SYSTEM CONTROLLER

#### 1. Terminal Layout

63 ~ 43	
64	42
}	}
84	22
1 ~ 21	

#### 2. Key Matrix

	KEY IN 0 (PIN64)	KEY IN 1 (PIN65)	KEY IN 2 (PIN66)	KEY IN 3 (PIN67)
KEY OUT 0 (PIN57)		A U T O MEMORY	MEMORY	CANCEL
KEY OUT 1 (PIN58)		EON MODE	PTY SERCH	DISPLAY
KEY OUT 2 (PIN59)		FM MODE	FM	AM
KEY OUT 3 (PIN60)	1	2	3	4
KEY OUT 4 (PIN61)	5	6	7	8

#### 3. Description

Pin No.	Symbol	I/O	Description	Pin No.	Symbol	I/O	Description
1	3G	O	FL grid control	43	RDSRST	O	Reset signal for IC201
2	2G	O	FL grid control	44	PLLCE	O	Chip enable signal for PLL synthesizer
3	1G	O	FL grid control	45	PLL CLK	O	Clock for PLL synthesizer
4	S35	O	FL anode control	46	IF DATA	I	Data signal from PLL synthesizer
5	S34	O	FL anode control	47	PLLDA	O	Data for PLL synsesizer
6	S33	O	FL anode control	48	INH	I	Inhibit signal input
7	S32	O	FL anode control	49	RDS D.ST	I	D.Start signal from IC201
8	S31	O	FL anode control	50	/TUNED	I	TUNED indication control
9	S30	O	FL anode control	51	/STEREO	I	STEREO indication control
10	S29	O	FL anode control	52	RDT.E.A	I	Rotary encoder A input
11	S28	O	FL anode control	53	RDT.E.B	I	Rotary encoder B input
12	S27	O	FL anode control	54	DCS IN	O	Compulink signal input
13	S26	O	FL anode control	55	DCS OUT	O	Compulink signal output
14	S25	O	FL anode control	56	MUTE	I	Muting tuner sound
15	S24	O	FL anode control	57	KO0	I	Key matrix output
16	S23	O	FL anode control	58	KO1	O	Key matrix output
17	S22	O	FL anode control	59	KO2	O	Key matrix output
18	S21	O	FL anode control	60	KO3	O	Key matrix output
19	S20	O	FL anode control	61	KO4	O	Key matrix output
20	S19	O	FL anode control	62	KO5	O	Key matrix output
21	S18	O	FL anode control	63	KO6	O	Key matrix output
22	S17	O	FL anode control	64	KI0	I	Key matrix input
23	VP	--	Power supply for FL display	65	KI1	I	Key matrix input
24	P16	O	FL anode control	66	KI2	I	Key matrix input
25	P15	O	FL anode control	67	KI3	I	Key matrix input
26	P14	O	FL anode control	68	RST	I	Reset signal input
27	P13	O	FL anode control	69		--	GND
28	P12	O	FL anode control	70		--	Not used
29	P11	O	FL anode control	71		--	GND
30	P10	O	FL anode control	72	OSC2	O	Clock oscillation terminal
31	P9	O	FL anode control	73	OSC1	I	Clock oscillation terminal
32	P8	O	FL anode control	74	VDD	--	Power supply
33	P7	O	FL anode control	75	13G	O	FL grid control
34	P6	O	FL anode control	76	12G	O	FL grid control
35	P5	O	FL anode control	77	11G	O	FL grid control
36	P4	O	FL anode control	78	10G	O	FL grid control
37	P3	O	FL anode control	79	9G	O	FL grid control
38	P2	O	FL anode control	80	8G	O	FL grid control
39	P1	O	FL anode control	81	7G	O	FL grid control
40	STBY	O	STANDBY indication control	82	6G	O	FL grid control
41	RDSCK	I	Clock input from IC201	83	5G	O	FL grid control
42	RDSDATA	I	Data signal from IC201	84	4G	O	FL grid control

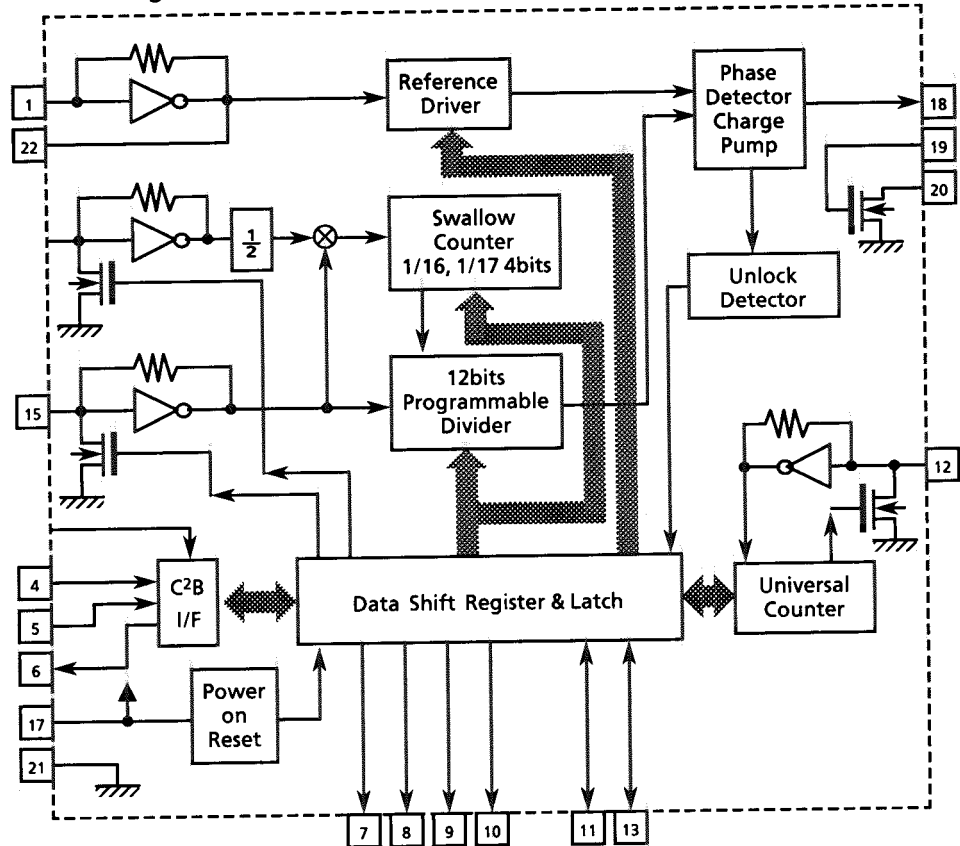
# FX-382RBK

## ■ LC72131 (IC102) : PLL Synthesizer

### 1. Terminal Layout

XIN	1	22	XOUT
	2	21	VSS
PLLCE	3	20	LPF OUT
PLLDA	4	19	LPF IN
PLLCK	5	18	PD
IFDATA	6	17	VDD
<u>FM</u>	7	16	FM OSC
<u>MW</u>	8	15	AM OSC
<u>LW</u>	9	14	
AUTO/MONO	10	13	IF REQ
POWER	11	12	FM/AM IF

### 2. Block Diagram



### 3. Pin Functions

Pin No.	Symbol	I/O	Functions	Pin No.	Symbol	I/O	Functions
1	X in	I	Crystal oscillator (7.2MHz).	12	FM/AM IF	I	Universal counter input
2		--	Not use	13	IF REQ	O	Output the "IF-signal request" to IC102
3	PLLCE	I	Fix the chip enable to "H" when inputting(DI) and outputting (DO) the serial data	14		I	Not use
4	PLLDA	I	Receive the control data from the controller (IC201).	15	AMOSC	I	Input the local oscillator signal of AM.
5	PLLCK	I	This clock is used to synchronize data when transmitting the data of DI and DO.	16	FM OSC	I	Input the local oscillator signal of FM.
6	IFDATA	O	Transmit the data from LC72131 to the controller which is synchronized with CK.	17	VDD	O	This is a terminal of power supply.
7	<u>FM</u>	O	It is "L" on FM mode.	18	PD	O	PLL charge pump output : When the local oscillator signal frequency is higher than the reference frequency high level signals will output. When it is lower than the reference frequency, low level signals will output. When it is same as reference frequency signals, it will be floating.
8	<u>MW</u>	O	It is "L" on MW mode.	19	LPF IN	I	Transistor used for the PLL active low-pass filter
9	<u>LW</u>	O	It is "L" on LW mode.	20	LPF OUT	O	Transistor used for the PLL active low-pass filter
10	<u>AUTO</u> <u>MONO</u>	O	It is "L" on monaural, "H" on auto.	21	VSS	--	Connected to GND
11	POWER	O	Regulator control signal PON "H", STANDBY "L"	22	X out	O	Crystal oscillator (7.2MHz).

■ SAA6579 (IC202) : Radio data system demodulator

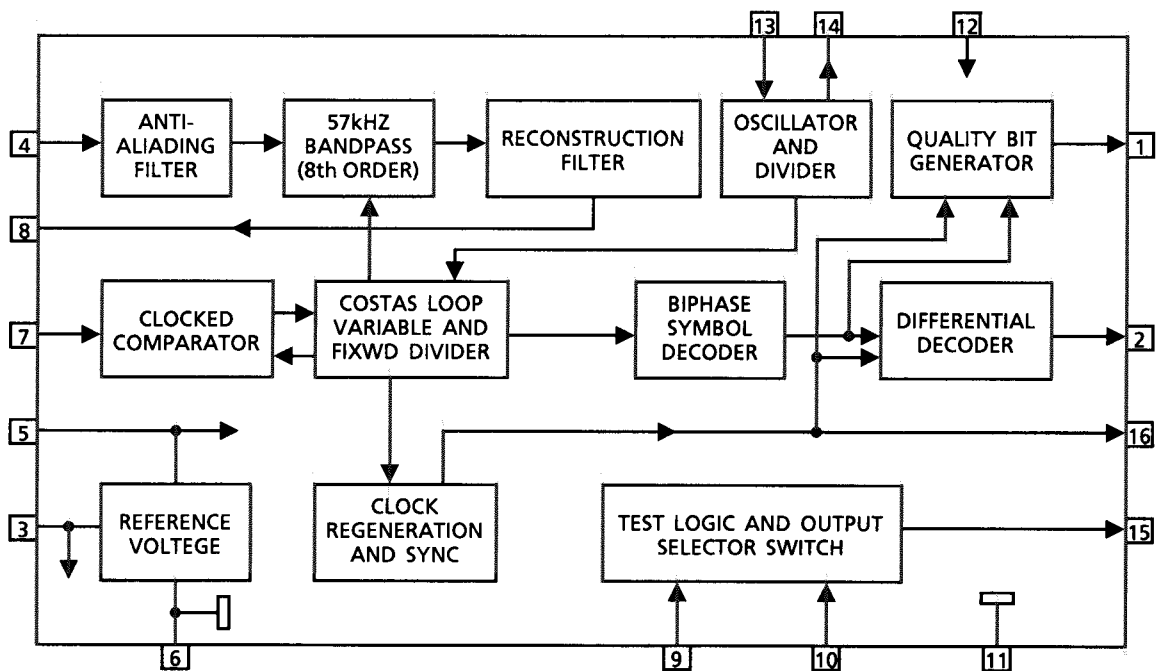
1. Terminal Layout

QUAL	1	16	RDCL
RDDA	2	15	T57
Vref	3	14	OSCO
MUX	4	13	OSCI
VDDA	5	12	VDD
GND	6	11	GND
CIN	7	10	GND
SCOUT	8	9	GND

2. Pin Function

Pin No.	Symbol	I/O	Function
1	QUAL	—	Non connection
2	RDDA	O	RDS data output
3	Vref	O	Reference voltage output
4	MUX	I	Multiplex signal input
5	VDDA	—	+5V supply voltage for analog part
6	GND	—	Ground for analog part (0V)
7	CIN	I	Subcarrier input to comparator
8	SCOUT	O	Subcarrier output of reconstruction filter
9	GND	—	Ground for digital part (0V)
10	GND	—	Ground for digital part (0V)
11	GND	—	Ground for digital part (0V)
12	VDD	—	+5V supply voltage for digital part
13	OSCI	I	Oscillator input
14	OSCO	O	Oscillator output
15	T57	—	Non connection
16	RDCL	O	RDS clock output

3. Block Diagram

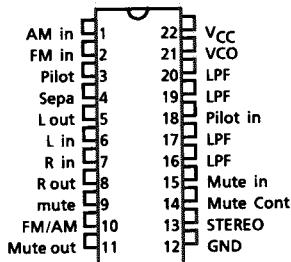


■ LA3401 (IC105) : FM MPX Detector

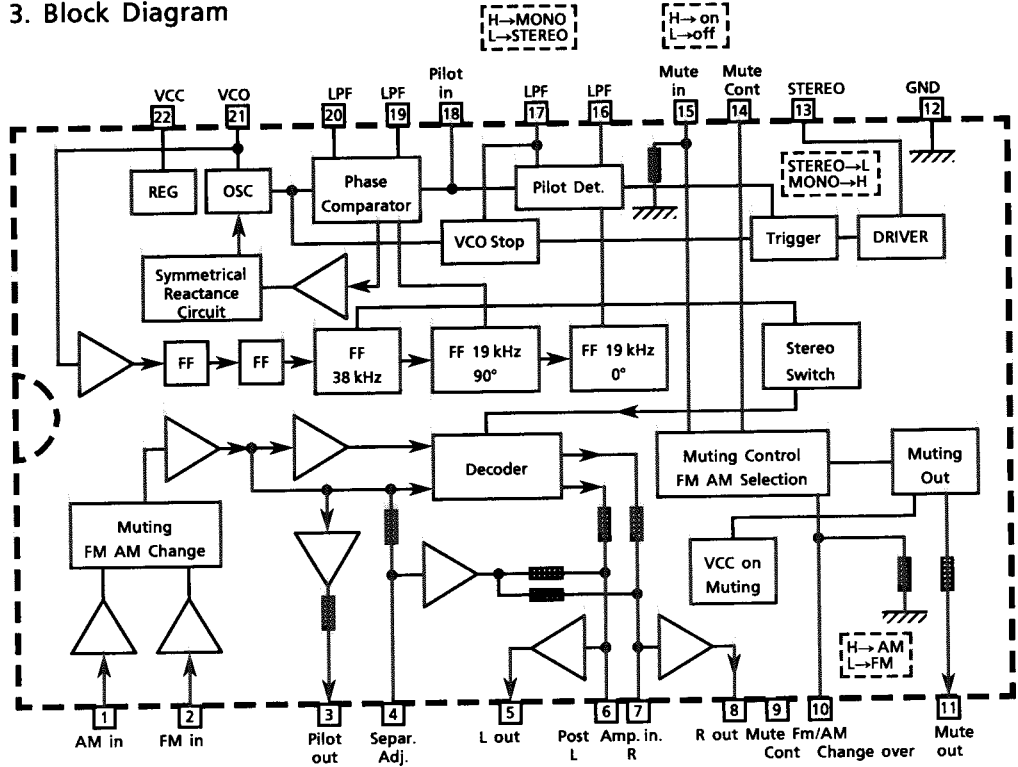
1. The main function descriptions

- (1) Detect the FM Multiplex Signal (Stereo signal).
- (2) When receiving FM Stereo Signal, it outputs the signal for indicator.
- (3) AM / FM Audio Amplifier.

2. Terminal Layout



3. Block Diagram



4. Pin Function Description

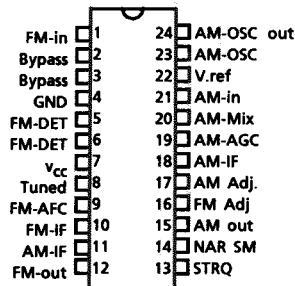
Pin No.	Symbol	I/O	Functions and Operations
1	AM in	I	This is an input terminal for AM detection signal.
2	FM in	I	This is an input terminal for FM detection signal.
3	Pilot out	O	Output of MPX pilot signal (Connect to Pin18).
4	Sepa. Adj.	--	Separation adjustment.
5	L. out	O	Left channel signal output.
6	L	O	Reversal output of Pin5.
7	R	O	Reversal output of Pin8.
8	R out	O	Right channel signal output
9	Mute Cont	--	The mute time is controlled by the connected capacitor when turning the power switch on.
10	FM / AM	I	Change over the FM / AM input. "H" : AM, "L" : FM
11	Mute out	--	Not use
12	GND	--	Ground terminal.
13	Stereo	O	Stereo indicator output. Stereo : "L", Mono : "H"
14	Mute Cont	--	The mute time is controlled by the connected capacitor when changing over the FM / AM .
15	Mute in	I	Mute signal input. "H" : Mute on, "L" : Mute off.
16	LPF	--	Low pass filter of pilot detector.
17	LPF	--	While this terminal goes to "H", the VCO stop.
18	Pilot in	I	Pilot input.
19	LPF	--	Low-pass filter of PLL.
20	LPF	--	Low-pass filter of PLL.
21	VCO	I	Voltage controlled oscillator terminal.
22	Vcc	--	Power supply.

■ LA1266A (IC103) : FM AM IF AMP & detector

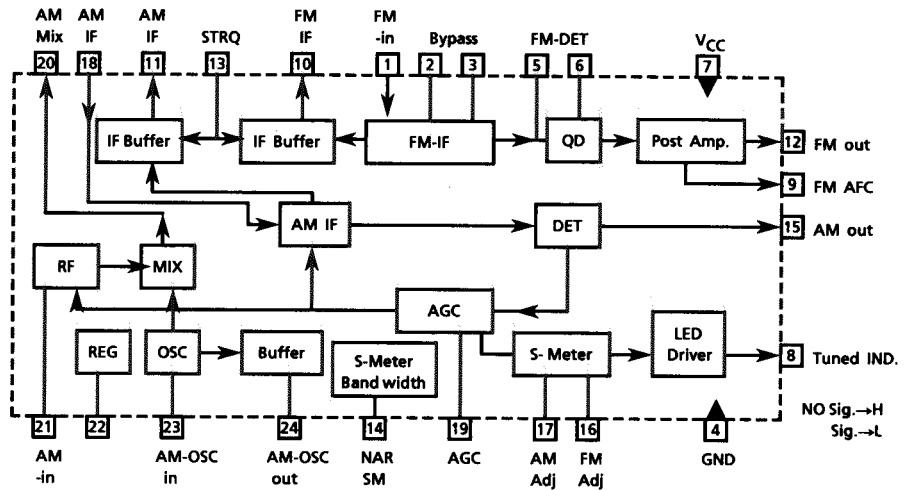
1. The main function descriptions

- (1) Amplify and detect of FM intermodulation frequencies.
- (2) It has local oscillator and mixer for AM, and amplify the AM-IF signal.

2. Top View



3. Block Diagram



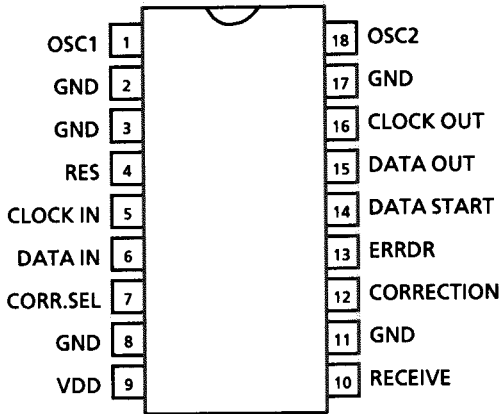
4. Pin Function Description

Pin No.	Symbol	I/O	Functions and Operations
1	FM in	I	This is an input terminal of FM IF Signal.
2, 3	Bypass	--	Bypass of FM IF Amp.
4	GND	--	This is the device ground terminal.
5, 6	FM DET	--	FM detect transformer.
7	V <sub>CC</sub>	--	This is the power supply terminal.
8	Tuned	O	When the set is tuning, this terminal become "L".
9	FM AFC	O	This is an output terminal of voltage for FM - AFC.
10	FM IF out	O	When the IF REQ signal of IC251(LC7218) applies to pin13, the signal of FM IF outputs.
11	AM IF out	O	When the IF REQ signal of IC251(LC7218) applies to pin13, the signal of AM IF outputs.
12	FM out	O	FM detection output.
13	STRQ	I	The IF-signals come out from pin10 (FM-IF) or pin11 (AM-IF) while this terminal goes to "High".
14	NAR SM	--	Control the Band-width of AM signal meter.
15	AM out	O	AM detection output.
16	FM Adj	--	For adjust the stop level (or mute level) of FM.
17	AM Adj	--	For adjust the stop level (or mute level) of AM.
18	AM-IF	I	Input of AM IF Signal.
19	AM-AGC	I	This is an AGC voltage Input terminal for AM.
20	AM-MIX	O	This is an output terminal for AM mixer.
21	AM-IN	I	This is an input terminal for AM RF Signal.
22	V.REF	--	Control the Band-width of FM signal meter.
23	AM-OSC	--	This is a terminal of AM Local oscillation circuit.
24	AM-OSC out	O	AM Local Oscillation Signal output.

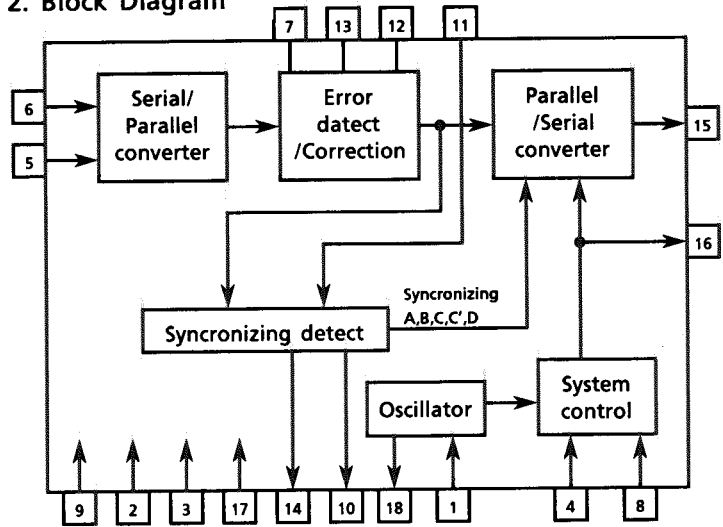
# FX-382RBK

## ■ LC7073 (IC201) : Radio Data System

### 1. Terminal Layout



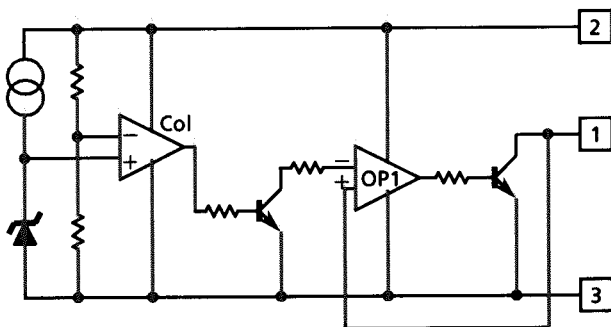
### 2. Block Diagram



### 3. Pin Functions

Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
1	OSC1	I	Oscillation terminal	10	RECEIVE	—	Non connection
2	GND	—	GND	11	GND	—	GND
3	GND	—	GND	12	CORRECTION	—	Non connection
4	RES	I	Reset input	13	ERRDR	—	Non connection
5	CLOCK IN	I	RDS clock input	14	DATA START	O	Data start signal for block data to output serial data
6	DATA IN	I	RDS data input	15	DATA OUT	O	Serial data output
7	CORR.SEL	I	Non connection	16	CLOCK OUT	O	Data output of serial data output
8	GND	—	GND	17	GND	—	GND
9	VDD	—	Power supply	18	OSC2	O	Oscillation terminal

## ■ PST9146T (IC561) : Reset IC

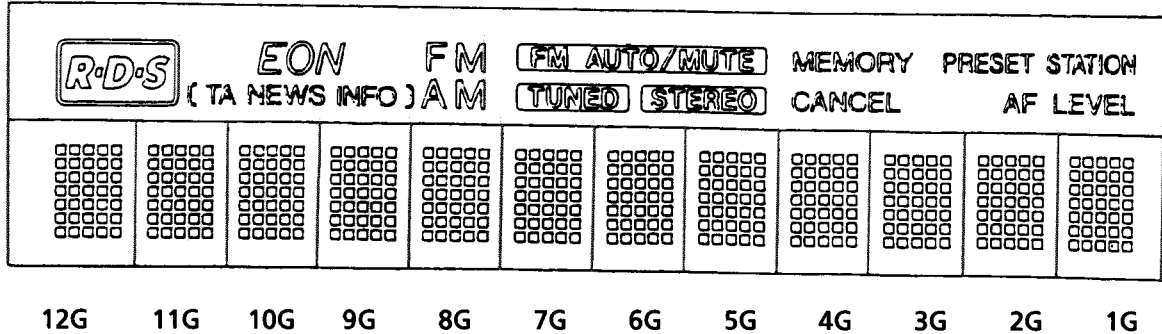


## Internal Connections for the FL Display Tube

■ ELU0001-181:( DI201)

1. Grid Assignment

13G



2. Pin Connections

(UPPER)

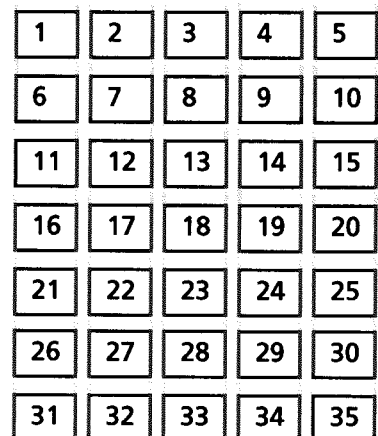
TERMINAL NO.	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61
ELECTRODE	F1	F1	F1	NP	P s1	P s2	P s3	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
TERMINAL NO.	60	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41
ELECTRODE	NP	NP	NP	13G	12G	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G	NP	F2	F2	F2

(LOWER)

TERMINAL NO.	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
ELECTRODE	P s20	P s21	P s22	P s23	P s24	P s25	P s26	P s27	P s28	P s29	P s30	P s31	P s32	P s33	P s34	P s35	NP	F2	F2	F2
TERMINAL NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
ELECTRODE	F1	F1	F1	NP	P s4	P s5	P s6	P s7	P s8	P s9	P s10	P s11	P s12	P s13	P s14	P s15	P s16	P s17	P s18	P s19

Notes   F: Filament   NP: No Pin  
 G: Grid  
 P: Anode

	1G~12G	13G		1G~12G
S1	1	RDS	S19	19
S2	2	EON	S20	20
S3	3	( )	S21	21
S4	4	TA	S22	22
S5	5	NEWS	S23	23
S6	6	INFO	S24	24
S7	7	FM	S25	25
S8	8	AM	S26	26
S9	9	FM AUTO/MUTE	S27	27
S10	10	TUNED	S28	28
S11	11	STEREO	S29	29
S12	12	MEMORY	S30	30
S13	13	CANCEL	S31	31
S14	14	PRESET STATION	S32	32
S15	15	AF LEVEL	S33	33
S16	16		S34	34
S17	17		S35	35
S18	18			



## Disassembly Procedures

**(1) Remove the top cover**

1. Remove 4 screws **(A)** fastening both sides of top cover, and 2 screws **(B)** fastening the rear side.
2. Remove the top cover.

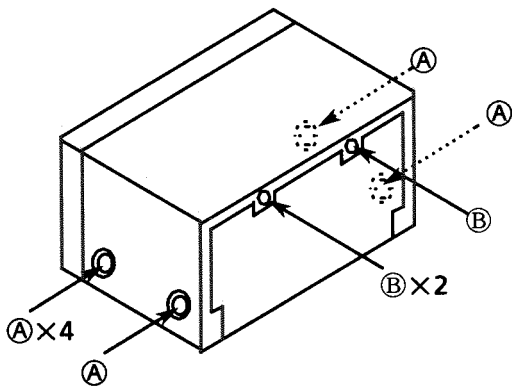
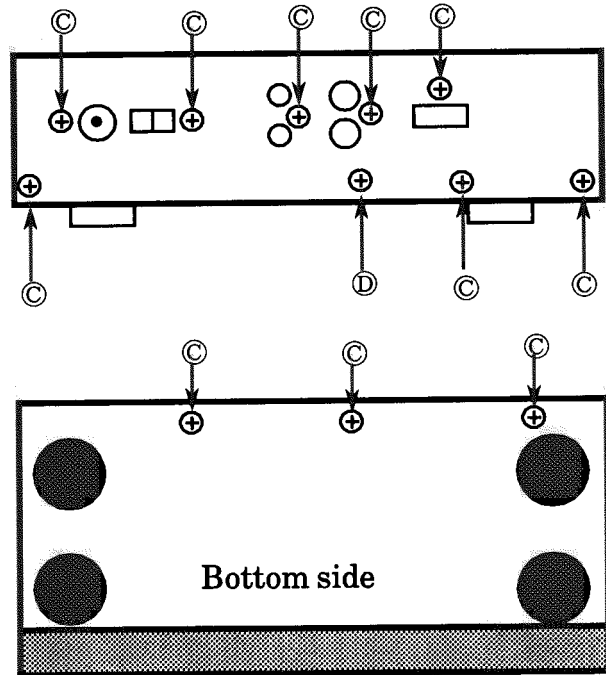


Fig.1

**(2) Remove the rear panel**

1. Remove 8 screws **(C)** and screw **(D)** fastening of the rear panel.
2. Remove the 3 screws **(C)** fastening of the bottom side.
3. Remove the rear panel.

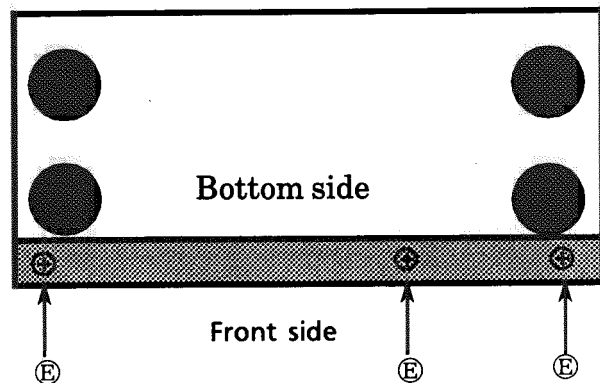


Front side

Fig.2

**(2) Remove the Front Panel Assembly**

1. Remove the top cover.
2. Disconnect the connectors. (CN101, CN102 and CN105)
3. Remove 3 screws **(E)** fastening bottom of the front panel assembly.
4. Remove the front panel assembly.



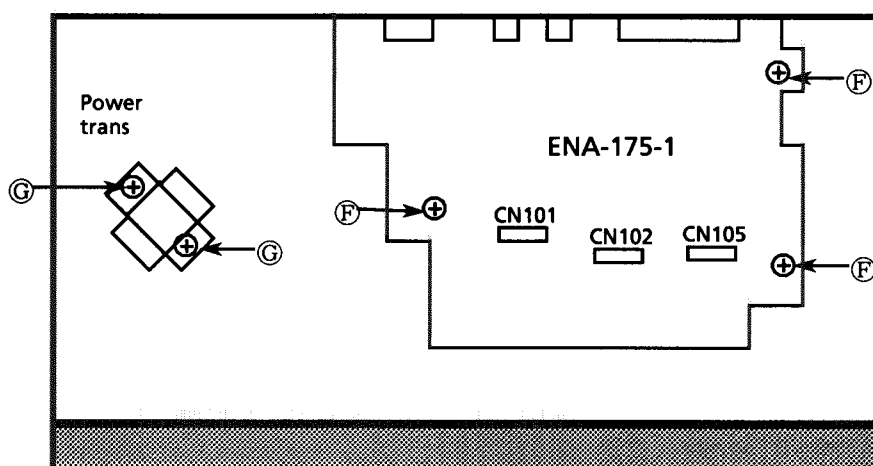
Bottom side

Front side



**(4) Remove the Main PCB (ENA-175-1)**

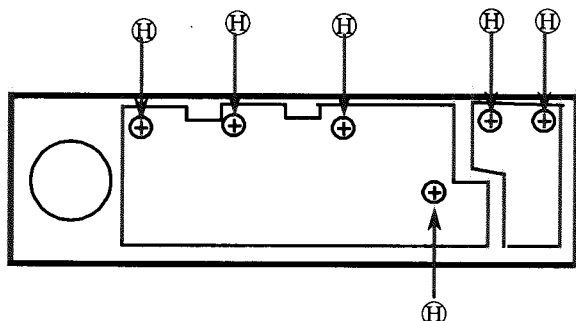
1. Remove the top cover.
2. Disconnect the nonnectors (CN101,CN102,CN105).
3. Remove the rear panel.
4. Remove 3 screws (F) fastening the main PCB.
5. Remove 2 screws (G) fastening the power trans.
6. Remove the main PCB .



Front side

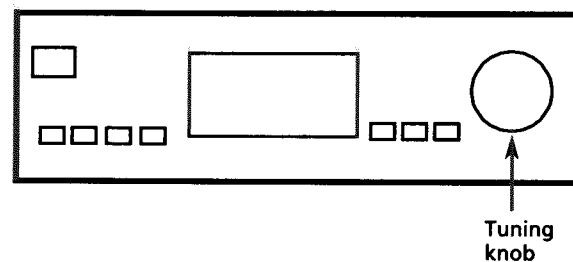
**(5) Remove the Control PCB (ENA-175-2)**

1. Remove the top cover.
2. Remove the front panel assembly.
3. Remove 6 screws (H) fastening the control PCB to remove it.

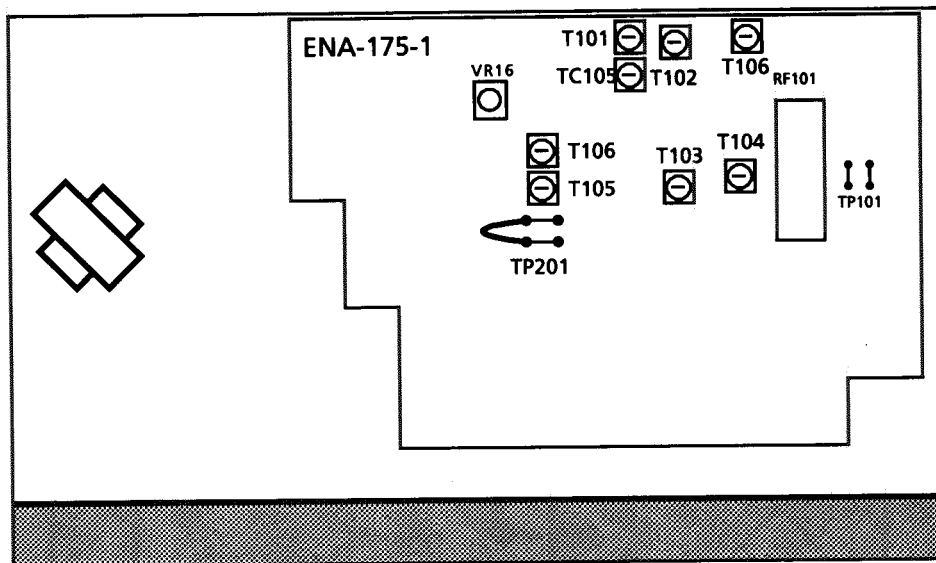


**(6) Remove the Tuning jog PCB (ENA-166-2)**

1. Remove the top cover.
2. Remove the front panel assembly.
3. Pull up the Tuning knob and remove it.
4. Remove the NUT fastening the tuning knob.
5. Remove the Tuning jog PCB .



## Adjustment Procedures



### 1. FM section

#### ■ FM oscillator

- (1) Set the frequency display to "108.0MHz" and the FM MODE switch to "MONO" position.
- (2) Confirm that the FM inter-station noise is received.
- (3) Confirm that the voltage of test point "TP101" is  $8.0V \pm 2.0V$ .
- (4) Set the frequency display to "87.5MHz" and confirm the voltage of test point "TP101" is  $1.6V \pm 1.0V$ .

#### ■ FM detector coil : T105

- (1) Connect a digital voltmeter to test point "TP102", and receive to "100.1MHz" signal with SSG at 70dB.
- (2) Adjust T105 so that the digital voltmeter reads  $0 \pm 1.5mV$ .
- (3) At the same time, adjust T106 so that the distortion of the audio output is minimized.

#### ■ Separation

- (1) Tune to a 98.1MHz stereo signal.
- (2) Adjust VR167 so that the channel separation becomes maximum.

### 2. LW section ( Adjust the L.W section before adjusting the M.W section. )

#### ■ LW oscillator : T104

- (1) Set the frequency display to 144kHz and adjust T104 so that the voltage of TP101 becomes  $0.8V \pm 0.4V$ .
- (2) Set the frequency display to 288kHz [ 290kHz ] and confirm that the voltage of test point TP101 is  $5.7V \pm 0.7V$ .

#### ■ LW antenna coil : T102

- (1) Connect a loop antenna to the "AM Loop" terminal on the rear panel.
- (2) Adjust T102 to obtain the best receiving sensitivity on 164kHz.

#### ■ LW antenna trimmer : TC106

- (1) Adjust TC106 to obtain the best receiving sensitivity on 245kHz.

### 3. MW section

#### ■ MW oscillator : T103

- (1) Set the frequency display to 522kHz and confirm that the voltage of test point TP101 is  $0.9V \pm 0.2V$ .
- (2) Set the frequency display to 1629kHz and confirm that the voltage of test point TP101 is  $7.5V \pm 0.8V$ .
- (3) If its voltage exceeds the allowance, adjust T103 to obtain the voltage.

#### ■ MW antenna coil : T101

- (1) Connect a loop antenna to the "AM Loop" terminal on the rear panel.
- (2) Adjust T101 to obtain the best receiving sensitivity on 603kHz.

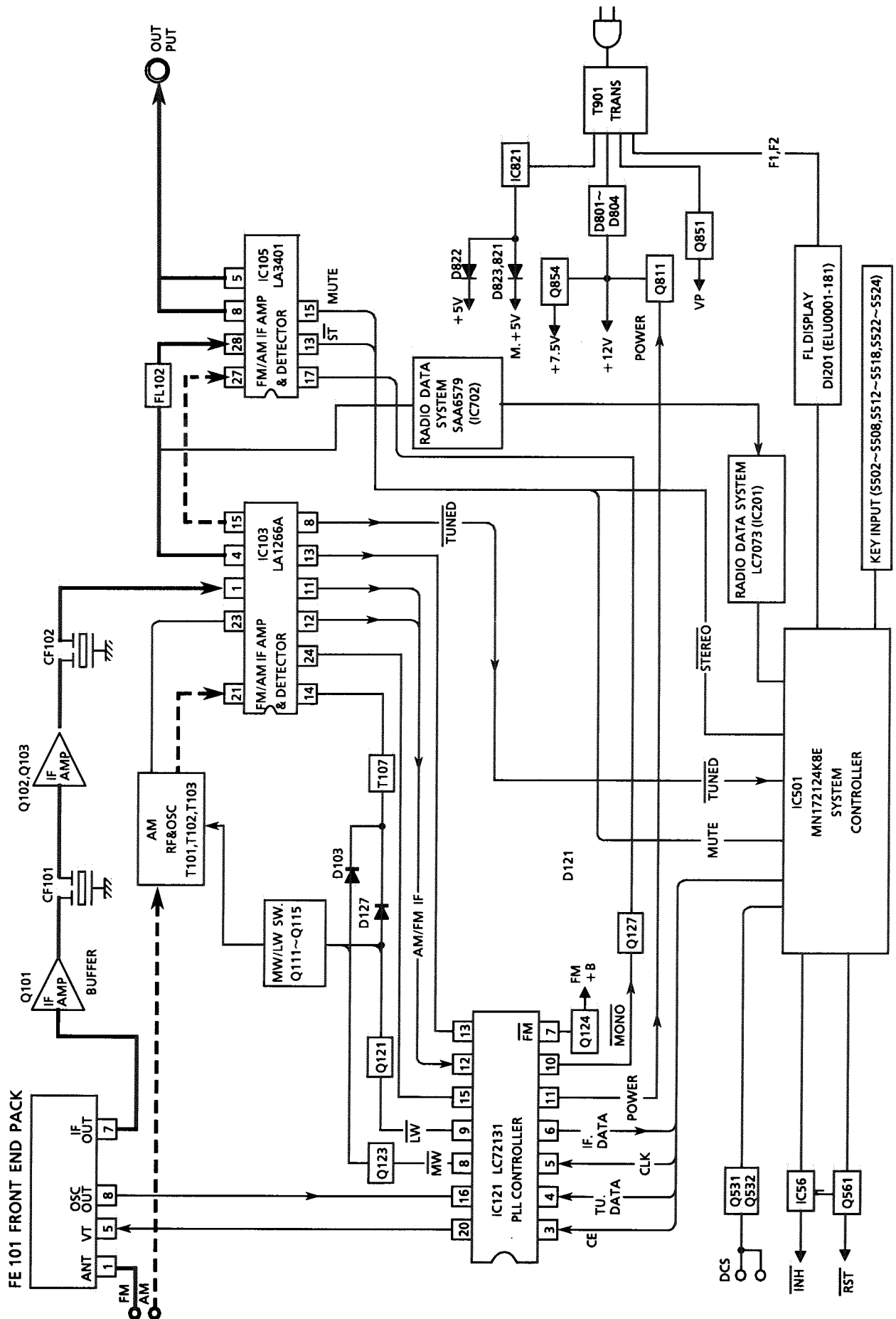
#### ■ MW antenna trimmer : TC105

- (1) Adjust TC105 to obtain the best receiving sensitivity on 1404kHz.

※ Adjust T102 and TC106 so that each sensitivity becomes maximum alternately.

Adjust T101 and TC105 so that each sensitivity becomes maximum alternately.

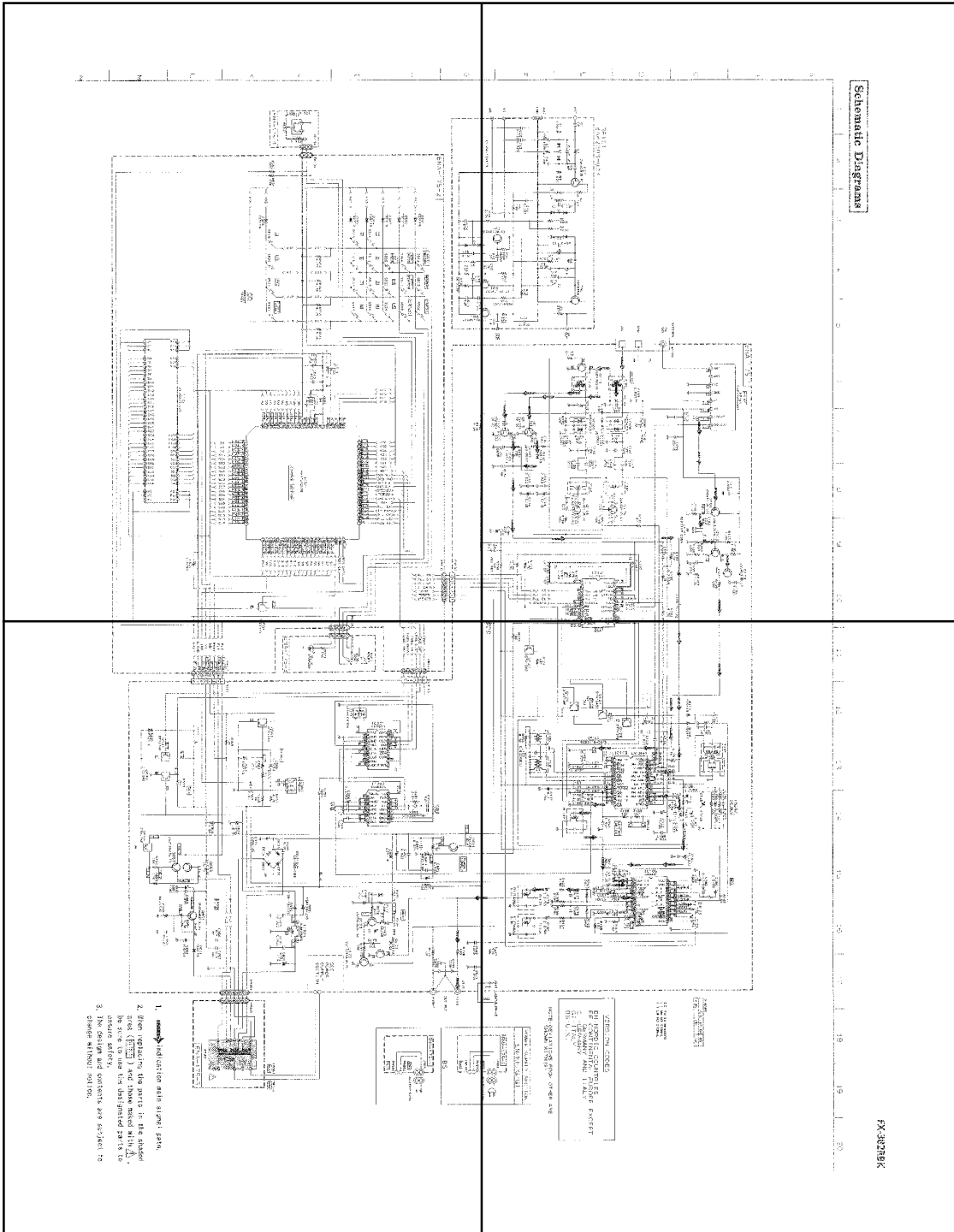
■ Block diagram





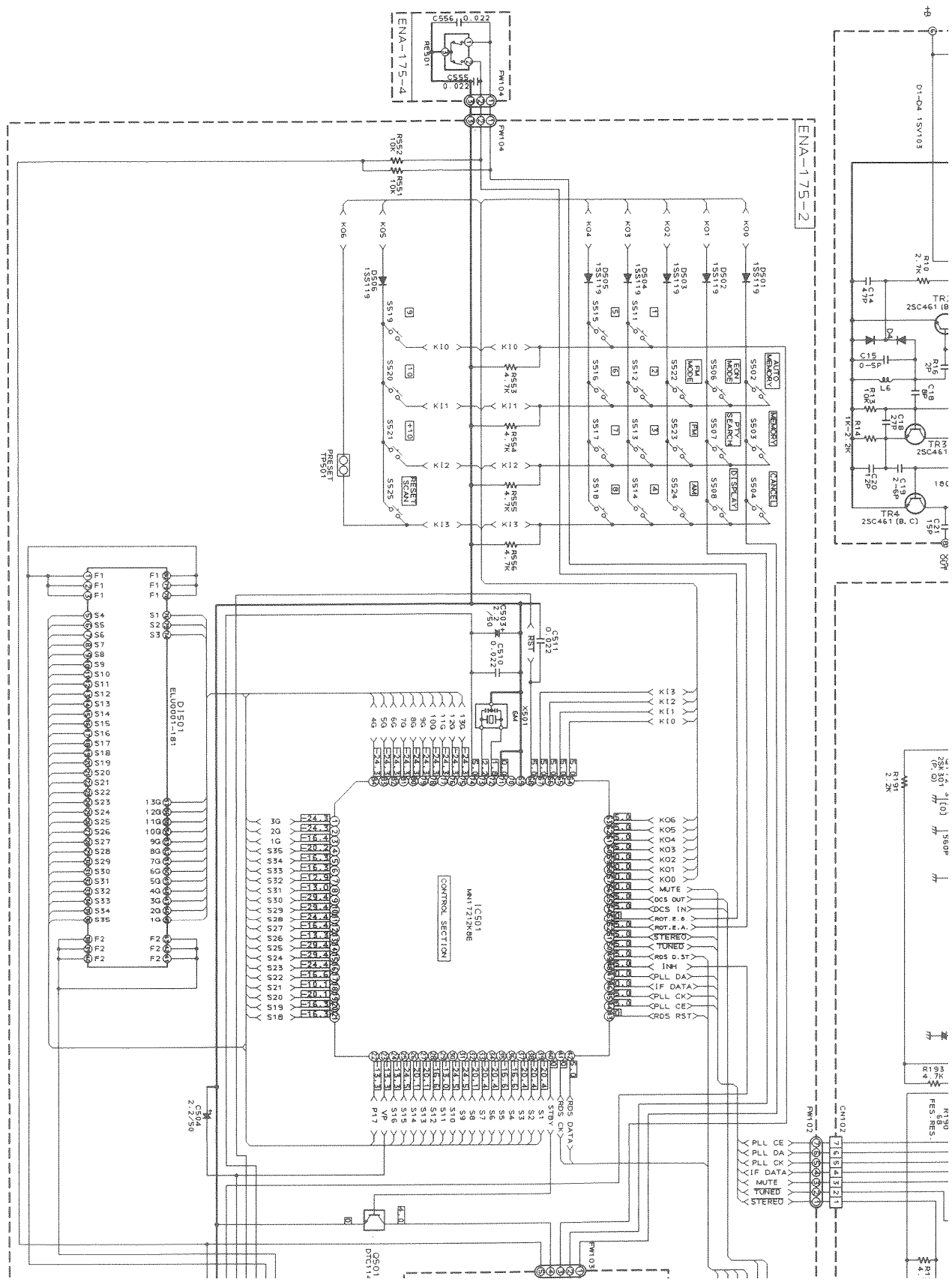
P-S.D-a

P-S.D-b



P-S.D-c

P-S.D-d





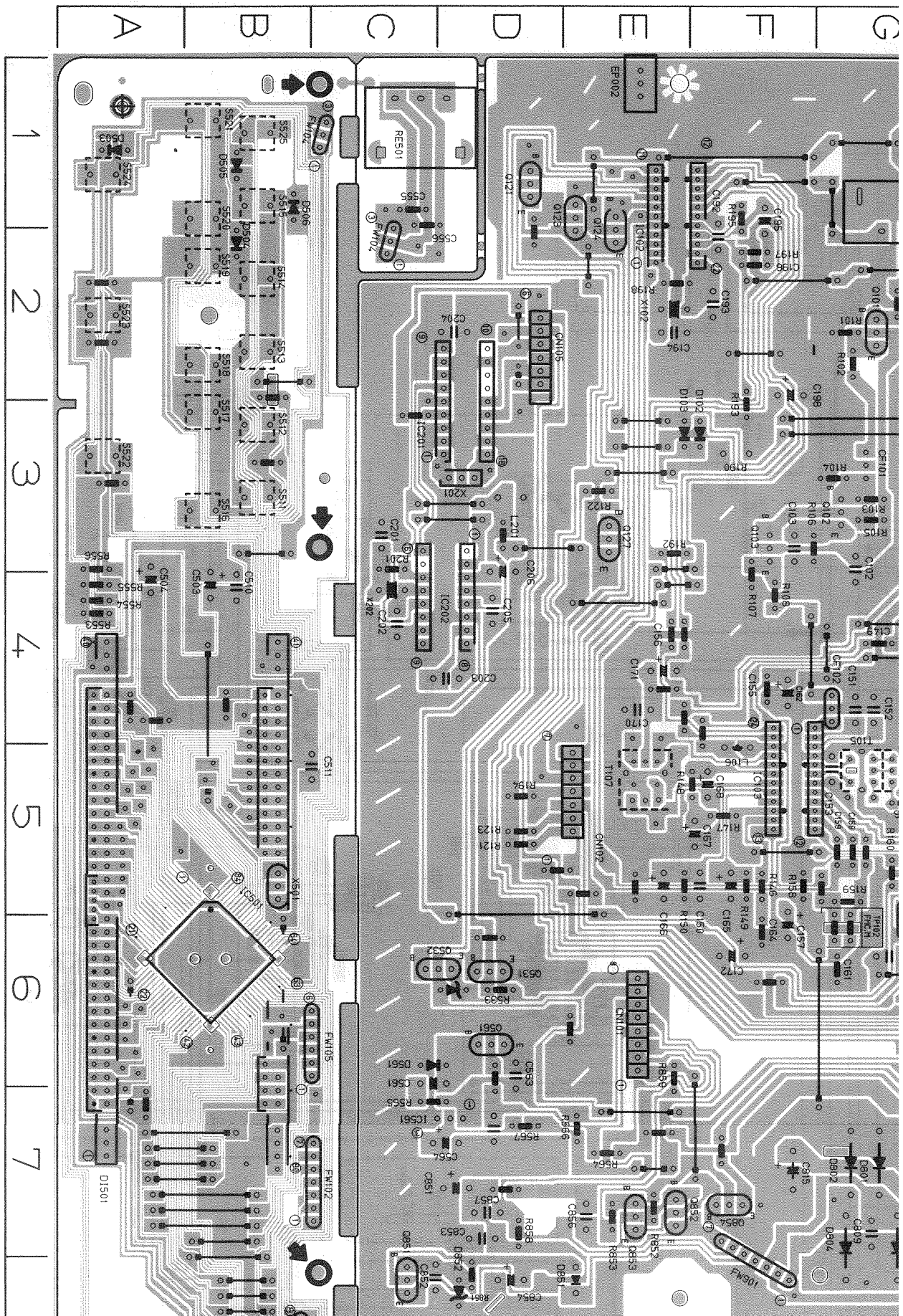




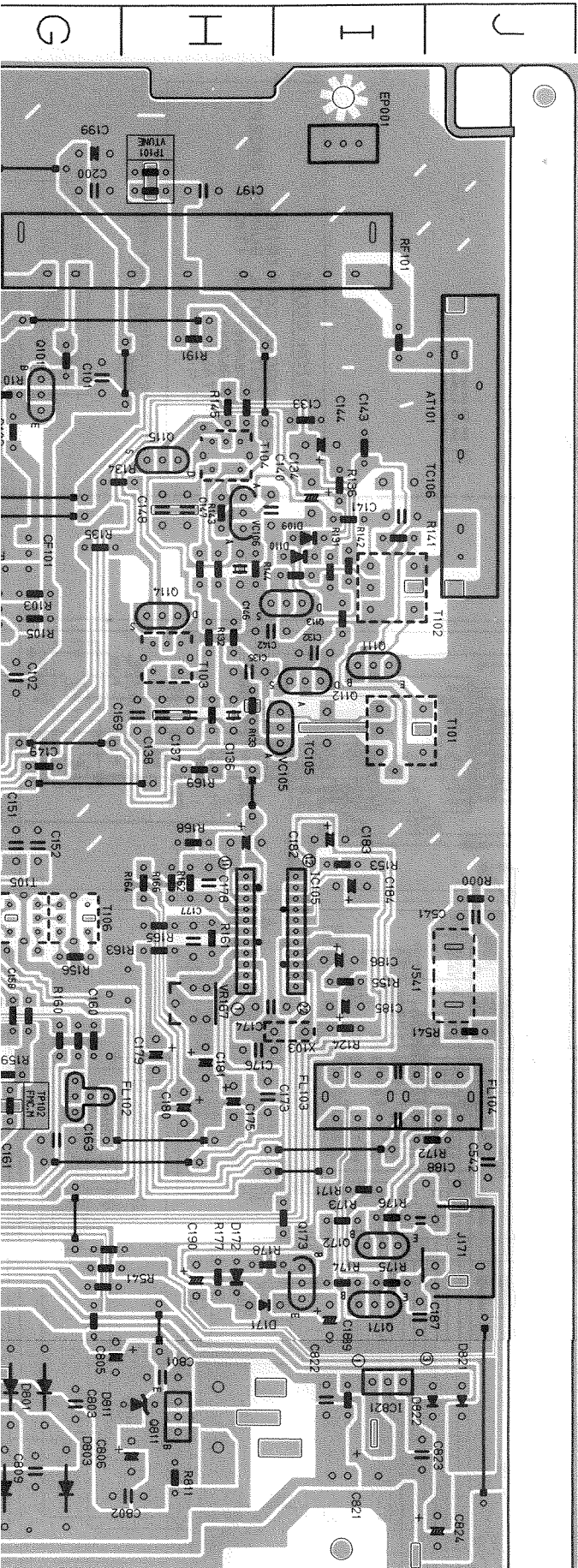








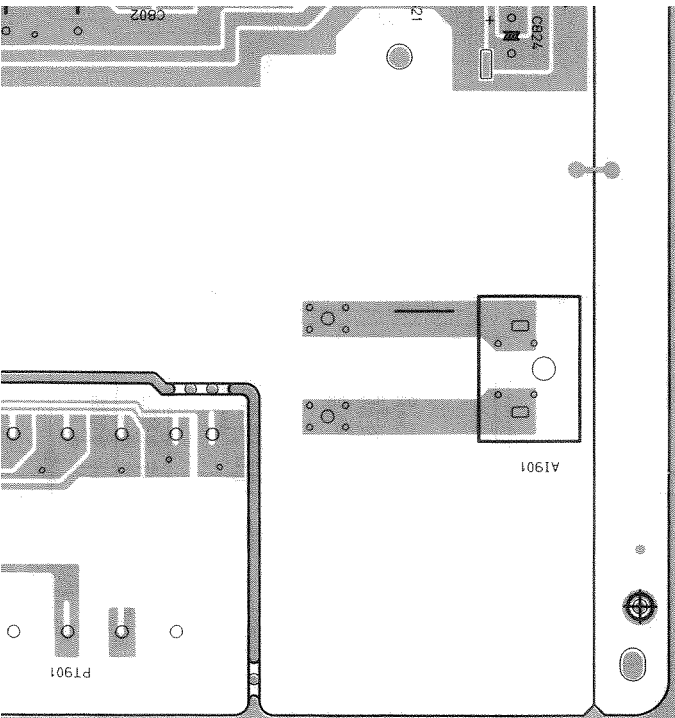
Printed Circuit Boards







ENA-175 Location List



Symbol	X	Y
C102	2 G	2 G
C105	4 G	4 G
C106	3 F	3 F
C132	3 I	3 I
C133	2 I	2 I
C134	3 I	3 I
C135	3 H	3 H
C136	4 H	4 H
C137	4 H	4 H
C138	4 H	4 H
C140	3 H	3 H
C141	3 I	3 I
C142	3 H	3 H
C143	2 I	2 I
C144	2 I	2 I
C146	3 H	3 H
C147	3 H	3 H
C148	3 H	3 H
C149	4 G	4 G
C150	5 F	5 F

Symbol	X	Y
C188	6 J	6 J
C189	7 I	7 I
C190	6 H	6 H
C192	2 F	2 F
C193	2 F	2 F
C194	2 E	2 E
C195	2 F	2 F
C196	2 F	2 F
C197	1 H	1 H
C199	1 G	1 G
C200	1 G	1 G
C201	3 C	3 C
C202	4 C	4 C
C203	4 C	4 C
C204	2 D	2 D
C205	4 D	4 D
C206	3 D	3 D
C503	3 B	3 B
C504	3 A	3 A
C510	4 B	4 B

Symbol	X	Y
D171	7 H	7 H
D172	6 H	6 H
D501	9 C	9 C
D502	9 C	9 C
D503	1 A	1 A
D504	2 B	2 B
D505	1 B	1 B
D506	1 B	1 B
D510	8 D	8 D
D531	6 D	6 D
D541	5 J	5 J
D562	6 C	6 C
D801	7 G	7 G
D802	7 G	7 G
D803	7 G	7 G
D804	7 G	7 G
D811	7 H	7 H
D821	7 J	7 J
D822	7 J	7 J
D851	8 E	8 E

Symbol	X	Y
Q127	3 E	3 E
Q171	7 I	7 I
Q172	6 I	6 I
Q173	6 I	6 I
Q195	1 E	1 E
Q196	1 D	1 D
Q501	10 B	10 B
Q531	6 D	6 D
Q532	6 C	6 C
Q561	6 D	6 D
Q811	7 H	7 H
Q851	8 C	8 C
Q852	7 E	7 E
Q853	7 E	7 E
Q854	7 F	7 F
R000	5 J	5 J
R101	2 G	2 G
R102	3 F	3 F
R103	3 G	3 G
R104	2 G	2 G

Symbol	X	Y
R166	5 H	5 H
R168	4 H	4 H
R169	4 H	4 H
R171	6 I	6 I
R172	6 I	6 I
R173	6 I	6 I
R174	6 I	6 I
R175	6 I	6 I
R176	6 I	6 I
R177	6 H	6 H
R178	6 H	6 H
R190	3 F	3 F
R191	2 H	2 H
R192	3 E	3 E
R193	2 F	2 F
R194	5 D	5 D
R195	2 F	2 F
R198	2 E	2 E
R201	3 C	3 C
R501	9 I	9 I

Symbol	X	Y
S512	3 B	3 B
S513	2 B	2 B
S514	2 B	2 B
S515	1 B	1 B
S516	3 B	3 B
S517	3 B	3 B
S518	2 B	2 B
S519	2 B	2 B
S520	1 B	1 B
S521	1 B	1 B
S522	3 A	3 A
S523	2 A	2 A
S524	1 A	1 A
S525	1 B	1 B
T101	4 I	4 I
T102	3 I	3 I
T103	3 H	3 H
T104	2 H	2 H
T105	5 G	5 G
T106	5 G	5 G





# PARTS LIST

\* All printed circuit boards and its assemblies are not available as service parts.

## The Marks for Designated Areas

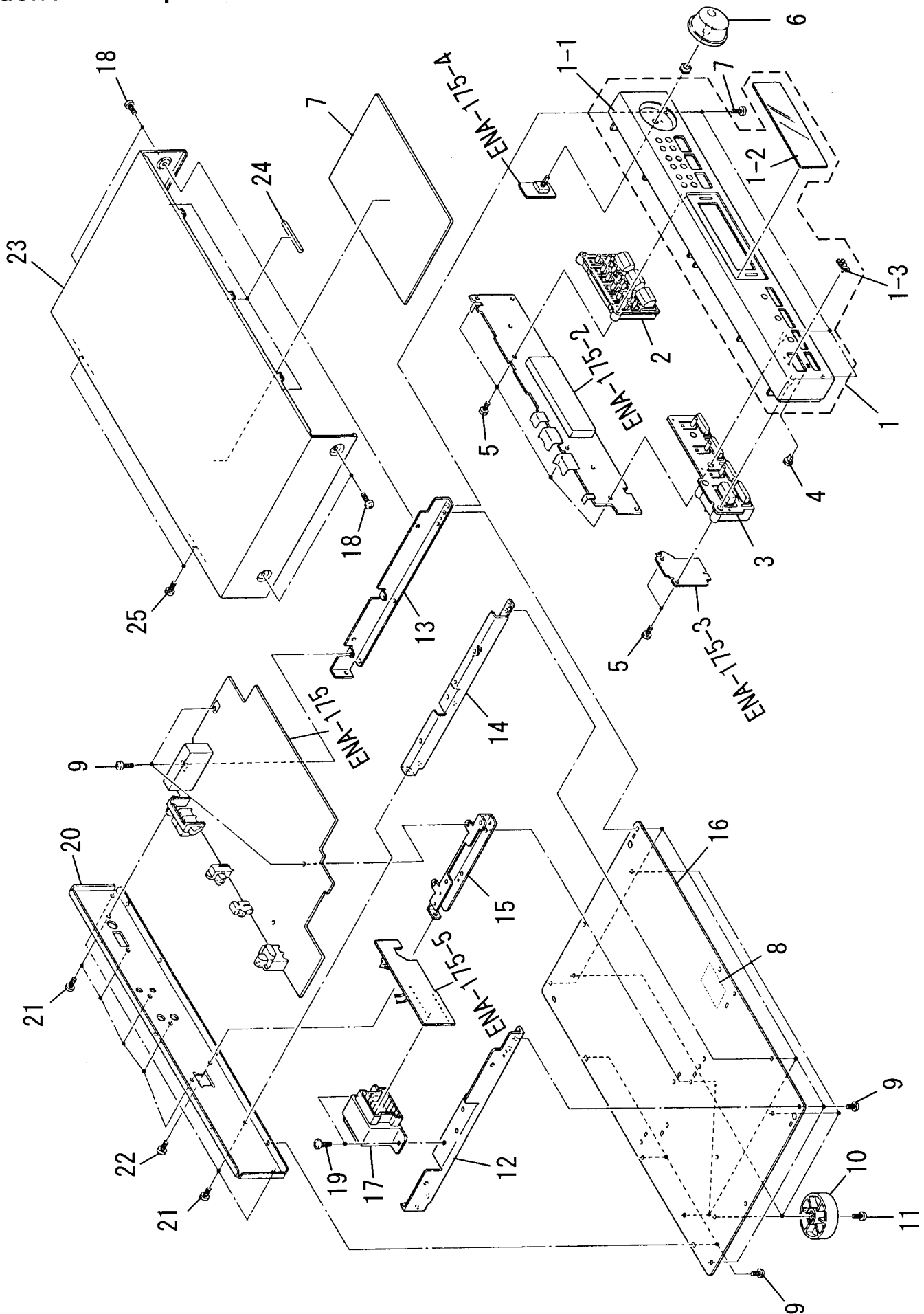
BS . . . the U.K.	EF . . . Continental Europe	EN . . . Scandinavia
GI . . . Italy	G . . . Germany	No mark indicates all areas.

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# General Exploded View and Parts List

Block No. M1MM



■ Parts List

Block No. **M1MM**

△	Item	Parts Number	Parts Name	Q'ty	Description	Area
	1	EFP-FX382RBKE(S)	FRONT PANEL ASSY			1
	1-1	E103125-001ST	FRONT PANEL	1		
	1-2	E309746-001	WINDOW SCREEN	1		
	1-3	VJD5429-001	JVC MARK	1		
	2	E208270-001	PUSH BUTTON	1		
	3	E208272-002	PUSH BUTTON	1		
	4	FSJD4001-002	INDICATOR LENS	1		
	5	SDSF2608Z	SCREW	6		
	6	E309756-001	TUNING KNOB	1		
	7	E409365-001	SHEET	1		G
	8	E70115-002	CAUTION LABEL	1		
	9	SBSG3008CC	TAPPING SCREW	14		
	10	E406282-005SF	FOOT ASSY	4		
	11	SBST3010Z	TAPPING SCREW	4		
	12	E306787-001SS	SIDE BRACKET	1		
	13	E306788-001SS	SIDE BRACKET	1		
	14	E306789-001SS	CENTER BRACKET	1		
	15	E306791-001SS	PRINTED BOARD BRACKET	1		
	16	E26725-001SS	BOTTOM PLATE	1		
△	17	ETP1000-89EAJ	POWER TRANSFORMER	1	PT901	
	18	E61660-004	SPECIAL SCREW	4		
	19	E61661-003	SPECIAL SCREW	2		
	20	E208775-002SSF	REAR PANEL	1		
	21	E73273-003	SPECIAL SCREW	8		
	22	E74572-001	TAPPING SCREW	1		
	23	E206986-003	METAL COVER	1		
	24	E306805-180	SPACER	1		
	25	SBSG3008M	TAPPING SCREW	5		
	-	E61029-005	NUMBER LABEL	1		
		E408919-001	RATING LABEL	1		BS
		E407619-056	FTZ LABEL	1		G
		E408843-001	APROVAL LABEL	1		EN
		QZL1031-101	LABEL	1		EF

△ : Safety Parts

# FX-382RBK

## ■ Electrical Parts List (ENA-175)

△	Item	Parts Number	Description	Area
		I. C. S		
	IC102	LC72131	I. C (M)	
	IC103	LA1266A	I. C (MONO-ANALOG)	
	IC105	LA3401	I. C (MONO-ANALOG)	
	IC201	LC7073	I. C (DIGI-MOS)	
	IC202	SAA6579	I. C (M)	
	IC501	MN172412KBE	I. C (MICRO-COMPUTER)	
	IC561	PST9146T	I. C (MONO-ANALOG)	
△	IC821	NJM78M06FA	I. C (MONO-ANALOG)	
		DIODES		
	D102	1SS119	SI. DIODE	
	D103	1SS119	SI. DIODE	
	D109	1SS119	SI. DIODE	
	D110	1SS119	SI. DIODE	
	D171	1SR139-200	SI. DIODE	
	D172	1SS119	SI. DIODE	
	D501	1SS119	SI. DIODE	
	D502	1SS119	SI. DIODE	
	D503	1SS119	SI. DIODE	
	D504	1SS119	SI. DIODE	
	D505	1SS119	SI. DIODE	
	D506	1SS119	SI. DIODE	
	D510	SLH-34VC3F	L. E. D.	
	D531	MTZ6.8JC	ZENER DIODE	
	D561	1SS119	SI. DIODE	
△	D801	DS135D-KB3	DIODE	
△	D802	DS135D-KB3	DIODE	
△	D803	DS135D-KB3	DIODE	
△	D804	DS135D-KB3	DIODE	
	D811	MTZ13JA	ZENER DIODE	
	D821	1SR139-200	SI. DIODE	
	D822	1SR139-200	SI. DIODE	
	D851	1SR139-200	SI. DIODE	
	D852	MTZ33JC	ZENER DIODE	
	VC105	SVC342 (L)	VARI-CAPA DIODE	
	VC106	SVC342 (L)	VARI-CAPA DIODE	
		TRANSISTORS		
	Q101	2SC461	SI. TRANSISTOR	
	Q102	2SC535	SI. TRANSISTOR	
	Q103	2SC461	SI. TRANSISTOR	
	Q111	2SD1302	SI. TRANSISTOR	
	Q112	2SK301 (P, Q)	F. E. T.	
	Q113	2SK301 (P, Q)	F. E. T.	
	Q114	2SK301 (P, Q)	F. E. T.	
	Q115	2SK301 (P, Q)	F. E. T.	
	Q121	DTA124ES	DIGITAL TRANSISTOR	
	Q123	DTA124ES	DIGITAL TRANSISTOR	
	Q124	DTA114WS	DIGITAL TRANSISTOR	
	Q127	DTA124ES	DIGITAL TRANSISTOR	
	Q171	2SC3311A (Q, R)	SI. TRANSISTOR	
	Q172	2SC3311A (Q, R)	SI. TRANSISTOR	
	Q173	2SA933S (RS)	SI. TRANSISTOR	
	Q501	DTC114YS	DIGITAL TRANSISTOR	
	Q531	DTC124ES	DIGITAL TRANSISTOR	
	Q532	DTA124ES	DIGITAL TRANSISTOR	
	Q561	DTC114YS	DIGITAL TRANSISTOR	
	Q811	2SD2061 (F, G)	SI. TRANSISTOR	
	Q851	2SB544MP (E, F)	SI. TRANSISTOR	
	Q852	2SD1302	SI. TRANSISTOR	
	Q853	2SD1302	SI. TRANSISTOR	
	Q854	DTA124ES	DIGITAL TRANSISTOR	
		CAPACITORS		
	C101	QCF21HP-223A	0.022MF 50V CER. CAP.	
	C102	QCF21HP-223A	0.022MF 50V CER. CAP.	
	C103	QCF21HP-223A	0.022MF 50V CER. CAP.	
	C132	QCS31HJ-561Z	560PF 50V CER. CAP.	
	C133	QCHB1EZ-223	0.022MF 25V CER. CAP.	
	C134	QETB1EM-106	10MF 25V AL. E. CAP.	
	C135	QCC21EM-223	0.022MF 25V CER. CAP.	
	C136	QCT25CH-180Z	18PF 50V CER. CAP.	
	C137	QCT26CH-221	220PF 50V CER. CAP.	
	C138	QCT26CH-241	240PF 50V CER. CAP.	

△	Item	Parts Number	Description	Area
	C140	QCC21EM-223	0.022MF 25V CER. CAP.	
	C141	QCS21HJ-390	39PF 50V CER. CAP.	
	C142	QCY31HK-272Z	2700PF 50V CER. CAP.	
	C143	QCHB1EZ-223	0.022MF 25V CER. CAP.	
	C144	QETB1EM-106	10MF 25V AL. E. CAP.	
	C146	QCT26CH-680	68PF 50V CER. CAP.	
	C147	QCT25CH-220Z	22PF 50V CER. CAP.	
	C148	QCT25CH-121	120PF 50V CER. CAP.	
	C149	QCHB1EZ-223	0.022MF 25V CER. CAP.	
	C150	QCF21HP-223A	0.022MF 50V CER. CAP.	
	C151	QCF21HP-223A	0.022MF 50V CER. CAP.	
	C152	QCF21HP-223A	0.022MF 50V CER. CAP.	
	C153	QCC21EM-223	0.022MF 25V CER. CAP.	
	C155	QCHB1EZ-223	0.022MF 25V CER. CAP.	
	C156	QCVB1CM-103Y	0.01MF 16V CER. CAP.	
	C157	QETB1HM-474	0.47MF 50V E. CAP.	
	C158	QCCB1HK-101Y	100PF 50V CER. CAP.	
	C159	QCCB1HK-101Y	100PF 50V CER. CAP.	
	C160	QCCB1HK-221Y	220PF 50V CER. CAP.	
	C161	QCHB1EZ-223	0.022MF 25V CER. CAP.	
	C162	QETB1EM-106	10MF 25V AL. E. CAP.	
	C163	QFN31HJ-332Z	3300PF 50V MYLAR CA	
	C164	QCHB1EZ-223	0.022MF 25V CER. CAP.	
	C165	QETB1HM-474	0.47MF 50V E. CAP.	
	C166	QETB1HM-225	2.2MF 50V AL. E. CAP.	
	C167	QETB1HM-225	2.2MF 50V AL. E. CAP.	
	C168	QETB1HM-475E	4.7MF 50V E. CAP.	
	C169	QCF21HP-223A	0.022MF 50V CER. CAP.	
	C170	QCF21HP-223A	0.022MF 50V CER. CAP.	
	C171	QETB1EM-106	10MF 25V AL. E. CAP.	
	C172	QETB1HM-475E	4.7MF 50V E. CAP.	
	C173	QFN81HJ-223	0.022MF 50V METAL. MYL	
	C174	QFN81HJ-473	0.047MF 50V METAL. MYL	
	C175	EEZ5009-106	10MF AL. E. CAP.	
	C176	QCY31HK-102Z	1000PF 50V CER. CAP.	
	C177	QFP31HJ-241Z	240PF 50V POLYPROP	
	C178	QFP31HJ-241Z	240PF 50V POLYPROP	
	C179	EET2508-475ZE	4.7MF E. CAP.	
	C180	EET2508-475ZE	4.7MF E. CAP.	
	C181	QETB1EM-106	10MF 25V AL. E. CAP.	
	C182	QETB1HM-225	2.2MF 50V AL. E. CAP.	
	C183	QETB1HM-105	1MF 50V AL. E. CAP.	
	C184	QETB1HM-105	1MF 50V AL. E. CAP.	
	C185	QETB1HM-225	2.2MF 50V AL. E. CAP.	
	C186	QETB1HM-474	0.47MF 50V E. CAP.	
	C187	QCS31HJ-331Z	330PF 50V CER. CAP.	
	C188	QCS31HJ-331Z	330PF 50V CER. CAP.	
	C189	QETB1EM-226N	22MF 25V E. CAP.	
	C190	QETB1HM-475E	4.7MF 50V E. CAP.	
	C192	QCC21EM-473	0.047MF 25V CER. CAP.	
	C193	QCS21HJ-180A	18PF 50V CER. CAP.	
	C194	QCS21HJ-180A	18PF 50V CER. CAP.	
	C195	QENB1HM-474	0.47MF 50V NP. E. CAP.	
	C196	QCCB1HK-102Y	1000PF 50V CER. CAP.	
	C197	QCF21HP-223A	0.022MF 50V CER. CAP.	
	C198	QETB1CM-227	220MF 16V AL. E. CAP.	
	C199	QETB1EM-226N	22MF 25V E. CAP.	
	C200	QCF21HP-103A	0.01MF 50V CER. CAP.	
	C201	QCS21HJ-820	82PF 50V CER. CAP.	
	C202	QCS21HJ-470	47PF 50V CER. CAP.	
	C203	QCS31HJ-561Z	560PF 50V CER. CAP.	
	C204	QCZ0205-155	1.5MF 25V C. CAP.	
	C205	QCS31HJ-331Z	330PF 50V CER. CAP.	
	C206	QETB1HM-225	2.2MF 50V AL. E. CAP.	
	C503	QETB1HM-225	2.2MF 50V AL. E. CAP.	
	C504	QETB1HM-225	2.2MF 50V AL. E. CAP.	
	C510	QCF21HP-223A	0.022MF 50V CER. CAP.	
	C511	QCF21HP-223A	0.022MF 50V CER. CAP.	
	C541	QCF31HP-102Z	1000PF 50V CER. CAP.	
	C542	QCY21HK-101	100PF 50V CER. CAP.	
	C555	QCXB1CM-222Y	2200PF 16V CER. CAP.	
	C556	QCXB1CM-222Y	2200PF 16V CER. CAP.	

■ Electrical Parts List (ENA-175)

Δ	Item	Parts Number	Description	Area
	C561	QETB1HM-225	2.2MF 50V AL E. CAP.	
	C563	QCF21HP-103A	0.01MF 50V CER. CAP.	
	C564	QETB1HM-475E	4.7MF 50V E. CAP.	
	C801	QCF21HP-223A	0.022MF 50V CER. CAP.	
	C802	QCF21HP-223A	0.022MF 50V CER. CAP.	
	C803	QCF21HP-223A	0.022MF 50V CER. CAP.	
	C805	QETB1CM-227	220MF 16V AL E. CAP.	
	C806	QETB1CM-227	220MF 16V AL E. CAP.	
	C809	QCF21HP-103A	0.01MF 50V CER. CAP.	
	C815	QETB1EM-228	2200MF 25V E. CAP.	
	C821	QETB1CM-228	2200MF 16V AL E. CAP.	
	C822	QCF21HP-223A	0.022MF 50V CER. CAP.	
	C823	QCF21HP-223A	0.022MF 50V CER. CAP.	
	C824	QETB0JM-108N	1000MF 6.3V E. CAP.	
	C851	QETB1HM-105	1MF 50V AL E. CAP.	
	C852	QCF21HP-223A	0.022MF 50V CER. CAP.	
	C853	QCF21HP-223A	0.022MF 50V CER. CAP.	
	C854	QETB1JM-107	100MF 63V AL E. CAP.	
	C856	QFV81HJ-104	0.1MF 50V THIN FILM	
	C857	QFV81HJ-104	0.1MF 50V THIN FILM	
	TC105	ENZ1003-006	00MF TRIMMER C	
	TC106	ENZ1003-006	00MF TRIMMER C	
		RESISTORS		
	R101	QRD167J-332	3.3K 1/6W CARBON RE	
	R102	QRD161J-221	220 1/6W CARBON RE	
	R103	QRD161J-222	2.2K 1/6W CARBON RE	
	R104	QRD161J-391	390 1/6W CARBON RE	
	R105	QRD167J-152	1.5K 1/6W CARBON RE	
	R106	QRD161J-681	680 1/6W CARBON RE	
	R107	QRD167J-332	3.3K 1/6W CARBON RE	
	R108	QRD161J-331	330 1/6W CARBON RE	
	R121	QRD161J-472	4.7K 1/6W CARBON RE	
	R122	QRD161J-101	100 1/6W CARBON RE	
	R123	QRD161J-472	4.7K 1/6W CARBON RE	
	R124	QRD161J-333	33K 1/6W CARBON RE	
	R131	QRD161J-331	330 1/6W CARBON RE	
	R132	QRD161J-103	10K 1/6W CARBON RE	
	R133	QRD161J-473	47K 1/6W CARBON RE	
	R134	QRD161J-103	10K 1/6W CARBON RE	
	R135	QRD161J-470	47 1/6W CARBON RE	
	R136	QRD161J-103	10K 1/6W CARBON RE	
	R141	QRD161J-472	4.7K 1/6W CARBON RE	
	R142	QRD161J-331	330 1/6W CARBON RE	
	R143	QRD161J-103	10K 1/6W CARBON RE	
	R144	QRD161J-473	47K 1/6W CARBON RE	
	R145	QRD161J-103	10K 1/6W CARBON RE	
	R146	QRD167J-560	56 1/6W CARBON RE	
	R147	QRD161J-103	10K 1/6W CARBON RE	
	R148	QRD161J-103	10K 1/6W CARBON RE	
	R149	QRD167J-223	22K 1/6W CARBON RE	
	R150	QRD161J-103	10K 1/6W CARBON RE	
	R153	QRD161J-103	10K 1/6W CARBON RE	
	R155	QRD167J-562	5.6K 1/6W CARBON RE	
	R156	QRD167J-822	8.2K 1/6W CARBON RE	
	R158	QRD161J-183	18K 1/6W CARBON RE	
	R159	QRD161J-561	560 1/6W CARBON RE	
	R160	QRD161J-333	33K 1/6W CARBON RE	EF EN G G
	R160	QRD167J-223	22K 1/6W CARBON RE	BS
	R161	QRD161J-244	240K 1/6W CARBON RE	
	R162	QRD161J-244	240K 1/6W CARBON RE	
	R163	QRD167J-332	3.3K 1/6W CARBON RE	
	R164	QRD167J-332	3.3K 1/6W CARBON RE	
	R165	QRD161J-274	270K 1/6W CARBON RE	
	R166	QRD161J-274	270K 1/6W CARBON RE	
	R168	QRD161J-103	10K 1/6W CARBON RE	
	R169	QRD161J-103	10K 1/6W CARBON RE	
	R171	QRD167J-332	3.3K 1/6W CARBON RE	
	R172	QRD167J-332	3.3K 1/6W CARBON RE	
	R173	QRD161J-103	10K 1/6W CARBON RE	
	R174	QRD161J-103	10K 1/6W CARBON RE	
	R175	QRD161J-101	100 1/6W CARBON RE	

Δ	Item	Parts Number	Description	Area
	R176	QRD161J-101	100 1/6W CARBON RE	
	R177	QRD161J-104	100K 1/6W CARBON RE	
	R178	QRD161J-104	100K 1/6W CARBON RE	
Δ	R190	QRZ0077-680	68 1/4W FUSIBLE R	
	R191	QRD161J-222	2.2K 1/6W CARBON RE	
	R192	QRD161J-472	4.7K 1/6W CARBON RE	
	R193	QRD161J-472	4.7K 1/6W CARBON RE	
	R194	QRD161J-472	4.7K 1/6W CARBON RE	
	R195	QRD161J-222	2.2K 1/6W CARBON RE	
	R197	QRD167J-822	8.2K 1/6W CARBON RE	
	R198	QRD161J-473	47K 1/6W CARBON RE	
	R201	QRD161J-222	2.2K 1/6W CARBON RE	
	R501	QRD161J-221	220 1/6W CARBON RE	
	R533	QRD161J-103	10K 1/6W CARBON RE	
	R541	QRD161J-471	470 1/6W CARBON RE	
	R551	QRD161J-103	10K 1/6W CARBON RE	
	R552	QRD161J-103	10K 1/6W CARBON RE	
	R553	QRD161J-472	4.7K 1/6W CARBON RE	
	R554	QRD161J-472	4.7K 1/6W CARBON RE	
	R555	QRD161J-472	4.7K 1/6W CARBON RE	
	R556	QRD161J-472	4.7K 1/6W CARBON RE	
	R564	QRD161J-103	10K 1/6W CARBON RE	
	R565	QRD161J-102	1K 1/6W CARBON RE	
	R566	QRD161J-102	1K 1/6W CARBON RE	
	R567	QRD161J-472	4.7K 1/6W CARBON RE	
	R811	QRD167J-332	3.3K 1/6W CARBON RE	
	R851	QRD167J-332	3.3K 1/6W CARBON RE	
	R852	QRD161J-103	10K 1/6W CARBON RE	
	R853	QRD161J-103	10K 1/6W CARBON RE	
	R858	QRD167J-152	1.5K 1/6W CARBON RE	
	R859	QRD167J-152	1.5K 1/6W CARBON RE	
	VR167	QVPA601-104A	100K TRIMMER R	
		OTHERS		
		EMW10622-002	PRINTED BOARD	
		SBS83008Z	WOOD SCREW	
	H811	E70945-H25	HEAT SINK	
	J171	EMN00TV-223A	PIN JACK	
	J541	QMS3501-021	PIN JACK	
Δ	J901	QMCB001-E02H	AC SOCKET	
	L106	EQL3001-102K	INDUCTOR	
	L201	EQL4007-101	INDUCTOR	
	S501	ESPO001-023M	TACT SWITCH	
	S502	ESPO001-023M	TACT SWITCH	
	S503	ESPO001-023M	TACT SWITCH	
	S504	ESPO001-023M	TACT SWITCH	
	S505	ESPO001-023M	TACT SWITCH	
	S506	ESPO001-023M	TACT SWITCH	
	S507	ESPO001-023M	TACT SWITCH	
	S508	ESPO001-023M	TACT SWITCH	
	S511	ESPO001-023M	TACT SWITCH	
	S512	ESPO001-023M	TACT SWITCH	
	S513	ESPO001-023M	TACT SWITCH	
	S514	ESPO001-023M	TACT SWITCH	
	S515	ESPO001-023M	TACT SWITCH	
	S516	ESPO001-023M	TACT SWITCH	
	S517	ESPO001-023M	TACT SWITCH	
	S518	ESPO001-023M	TACT SWITCH	
	S519	ESPO001-023M	TACT SWITCH	
	S520	ESPO001-023M	TACT SWITCH	
	S521	ESPO001-023M	TACT SWITCH	
	S522	ESPO001-023M	TACT SWITCH	
	S523	ESPO001-023M	TACT SWITCH	
	S524	ESPO001-023M	TACT SWITCH	
	S525	ESPO001-023M	TACT SWITCH	
	T101	EQR1111-014	RF COIL	
	T102	EQR1310-005	RF COIL	
	T103	EQR1207-015	OSC COIL	
	T104	EQR1307-009	OSC COIL	
	T105	EQT2140-012	DET. COIL	
	T106	EQT2140-013	DET. COIL	
	T107	ECB1560-012	CERAMIC FILTER	
	X102	ECX0007-200KWJ1	CRYSTAL	

■ Electrical Parts List (ENA-175)

△	Item	Parts Number	Description	Area
	X103	ECX0000-456KR	CERAMIC RESONATOR	
	X201	EFO-EC4004T4	CERAMIC RESONATOR	
	X202	VCX5057-001	CRYSTAL	
	X501	ECX0060-000EM	CERAMIC RESONATOR	
	AT101	EMB41YV-303KJ4	ANTENNA TERMINAL	
	CF101	ECB2123-005R	CERAMIC FILTER	
	CF102	ECB2118-007R	CERAMIC FILTER	
	EP001	EMZ4002-001Z	EARTH PLATE	
	EP002	EMZ4002-001Z	EARTH PLATE	
	FL102	EQF0102-001	LOWPASS FILTER	
	FL103	EQF0101-011	LOWPASS FILTER	
	FL104	EQF0101-011	LOWPASS FILTER	
	FW101	EW380-25LS	FLAT WIRE ASSY	
	FW102	EW370-25LS	FLAT WIRE ASSY	
	FW103	EW350-13LS	FLAT WIRE ASSY	
	FW104	EW330-13SS	FLAT WIRE ASSY	
	FW105	EW360-30LS	FLAT WIRE ASSY	
	FW901	EW370-16LS	FLAT WIRE ASSY	
	JT101	EMV7145-004Z	SOCKET ASSY	
	JT102	EMV7145-004Z	SOCKET ASSY	
	JT103	EMV7145-003Z	SOCKET ASSY	
	JT104	EMV7145-004Z	SOCKET ASSY	
	JT105	EMV7145-003Z	SOCKET ASSY	
	JT106	EMV7145-003Z	SOCKET ASSY	
	PW901	QWE881-16RR	PIN WIRE	
	PW902	QWE886-16RR	PIN WIRE	
	RE501	QSJ1004-E01	ENCODER SWITCH	
	RF101	EAF2203-003	VHF TUNER	

■ Accessories List

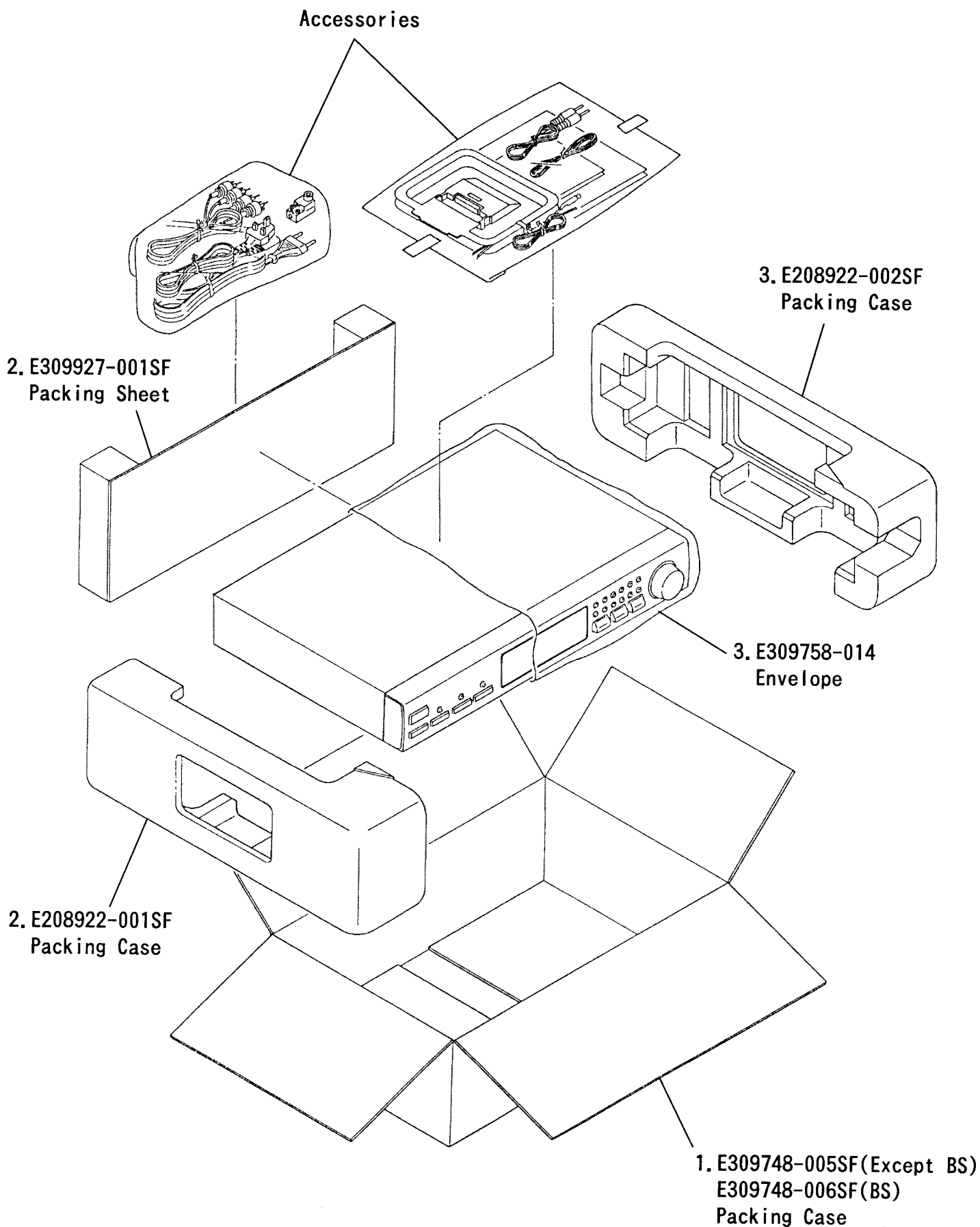
Block No. **M2MM**

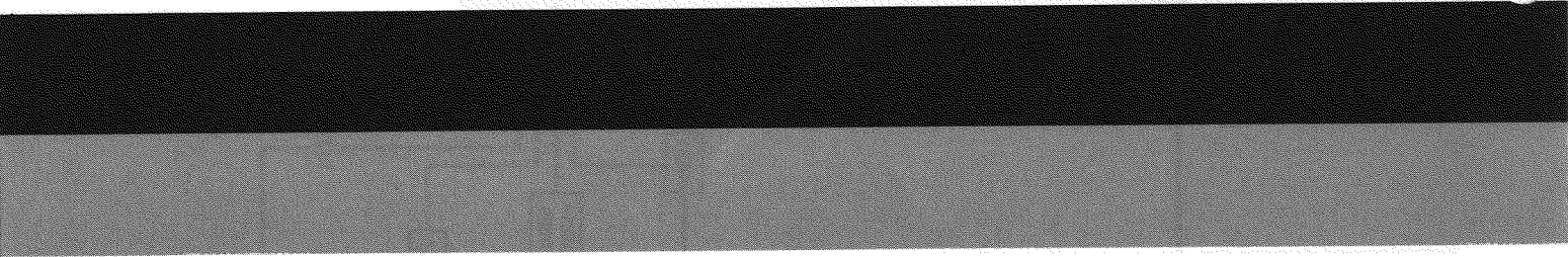
△	Item	Parts Number	Parts Name	Q'ty	Description	Area
	1	E30580-2419A	INSTRUCTION BOOK	1		EF BS
		E30580-2419A	INSTRUCTION BOOK	1		G GI
		E30580-2420A	INSTRUCTION BOOK	1		EN
△	2	QMP39F0-183E	POWER CORD	1		EF
△		QMP39F0-183E	POWER CORD	1		EN G
△		QMP39F0-183E	POWER CORD	1		GI
△		QMP5520-1835BS	POWER CORD	1		BS
	3	EWP302-011	SIGNAL CORD	1		
	4	EWP805-012	PLUG WIRE ASSY	1		
	5	EQB4001-015	LOOP ANTENNA	1		
	6	EWP503-001	ANTENNA WIRE	1		
	7	E43486-340A	SAFETY SHEET	1		BS
	8	BT-20134	WARRANTY CARD	1		G
		BT-54003-1	WARRANTY CARD	1		BS
	9	BT-20066A	DISTRIBUTOR LIST	1		BS
	10	E309758-002	ENVELOPE	2		

△ : Safety Parts

# Packing Materials and Part Numbers

Block No. **M3MM**





**JVC**

**VICTOR COMPANY OF JAPAN, LIMITED**  
**AUDIO PRODUCT DIVISION, 1644, SHIMOTSURUMA, YAMATO-SHI, KANAGAWA-KEN, 242, JAPAN**

